

CONSTRUCTION PLANS

FOR

CRAWFORD COUNTY AIRPORT

ROBINSON, CRAWFORD COUNTY, ILLINOIS

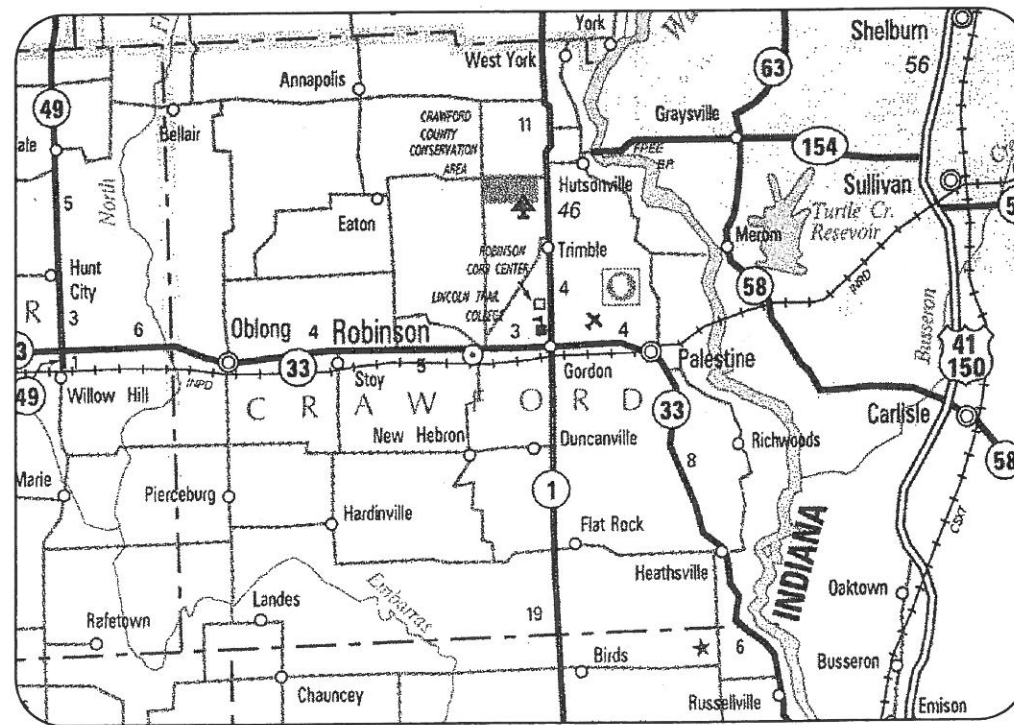
REPLACE THE MEDIUM INTENSITY LIGHTING SYSTEMS ON RUNWAYS 9-27 AND 17-35 AND ALL TAXIWAY LIGHTING

SCOPE OF WORK

THIS PROJECT CONSISTS OF REPLACING THE MEDIUM INTENSITY RUNWAY LIGHTS ON RUNWAY 9-27 AND RUNWAY 17-35, REPLACING THE MEDIUM INTENSITY TAXIWAY LIGHTING ON THE ASSOCIATED TAXIWAYS, AND THE ASSOCIATED CABLING, DUCT WORK AND VAULT WORK.

COVERING ELECTRICAL DESIGN FOR SHEETS 9-27 AND 31-48

REVISED: MARCH 14, 2014



LOCATION

ILL. PROJ.: RSV-4334
 S.B.G. PROJ.: 3-17-SBGP-XX
 LATITUDE: 39° 00' 45.01"
 LONGITUDE: 87° 38' 35.39"
 ELEVATION: 461.6' M.S.L.
 DATE: MARCH 7, 2014



HANSON
 Hanson Professional Services Inc.
 ELECTRICAL ENGINEER

Submitted by: *Kevin N. Lightfoot* ENGR
 Date Submitted: 3/14/2014
 Lics. Exp. Date: NOVEMBER 30, 2015



HANSON
 Hanson Professional Services Inc.
 CIVIL ENGINEER

Submitted by: *Charles A. Hagloch* ENGR
 Date Submitted: _____
 Lics. Exp. Date: NOVEMBER 30, 2015

CRAWFORD COUNTY AIRPORT AUTHORITY

Approved: *[Signature]* CHAIRMAN
 Date: 2/26/2014
 Approved: *[Signature]* SECRETARY
 Date: 2/26/2014



LOCATION OF COUNTY

MAR 14, 2014 9:07 AM HAGLOCH382
 p:\sp-svr\306.hanson.com\Projects\Documents\130058\130058\CAD\Airport\Sheet\G-001-CVR

REVISION	DATE			
CRAWFORD COUNTY AIRPORT				
ROBINSON				
CRAWFORD COUNTY, ILLINOIS				
ILL. PROJ.: RSV-4334				
S.B.G. PROJ.: 3-17-SBGP-XX				
Hanson Proj. No. 130058				
Filename: G-001-CVR.dwg				
Scale: NOT TO SCALE				
Date: 03/07/14				
LAYOUT	KNL	09/04/13		
DRAWN	BAK	09/06/13		
REVIEWED	CAH	03/07/14		
HANSON				
Hanson Professional Services Inc.				
525 South State Street, Suite 2086				
Springfield, IL 62760				
Ph: (217) 788-2460				
www.hansoninc.com				
Offices Nationwide				
REPLACE MRL AND MITL SYSTEMS				
COVER SHEET				
1				
1 of 48 sheets				

SUMMARY OF QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	TOTAL QUANTITIES	AS BUILT QUANTITIES
AR108158	1/C #8 5 KV UG CABLE IN UD	L.F.	30,788	
AR108258	2/C #8 5 KV CABLE IN UD	L.F.	3,371	
AR108756	1/C #6 GROUND	L.F.	27,945	
AR109200	INSTALL ELECTRICAL EQUIPMENT	L.S.	1	
AR110013	3" DIRECTIONAL BORE	L.F.	1,235	
AR110610	ELECTRICAL HANDHOLE	Each	5	
AR125410	MITL - STAKE MOUNTED	Each	145	
AR125415	MITL - BASE MOUNTED	Each	16	
AR125442	TAXI GUIDANCE SIGN, 2 CHARACTER	Each	2	
AR125444	TAXI GUIDANCE SIGN, 4 CHARACTER	Each	4	
AR125445	TAXI GUIDANCE SIGN, 5 CHARACTER	Each	2	
AR125505	MIRL, STAKE MOUNTED	Each	66	
AR125510	MIRL, BASE MOUNTED	Each	22	
AR125540	MI THRESHOLD LIGHT STAKE MTD	Each	16	
AR125901	REMOVE STAKE MOUNTED LIGHT	Each	142	
AR125902	REMOVE BASE MOUNTED LIGHT	Each	34	
AR125904	REMOVE TAXI GUIDANCE SIGN	Each	4	
AR150510	ENGINEER'S FIELD OFFICE	L.S.	1	
AR150520	MOBILIZATION	L.S.	1	
AR150540	HAUL ROUTE	L.S.	1	
AR800503	ENHANCED THRESHOLD LIGHT STAKE MT	Each	14	

SUMMARY OF QUANTITIES - ADDITIVE ALTERNATE NO. 1

ITEM NO.	DESCRIPTION	UNIT	TOTAL QUANTITIES	AS BUILT QUANTITIES
AS800413	MIRL LED UPGRADE	EACH	54	
AS800414	MI THRESHOLD LIGHT LED UPGRADE	EACH	16	

ADDITIVE ALTERNATE NO. 1 CONSIST OF THE UPGRADES TO LED (LIGHT EMITTING DIODE) TYPE LIGHTING FOR THE RESPECTIVE AIRFIELD LIGHT FIXTURES ON RUNWAY 9-27.

SUMMARY OF QUANTITIES - ADDITIVE ALTERNATE NO. 2

ITEM NO.	DESCRIPTION	UNIT	TOTAL QUANTITIES	AS BUILT QUANTITIES
AT800413	MIRL LED UPGRADE	EACH	34	
AT800414	MI THRESHOLD LIGHT LED UPGRADE	EACH	14	

ADDITIVE ALTERNATE NO. 2 CONSIST OF THE UPGRADES TO LED (LIGHT EMITTING DIODE) TYPE LIGHTING FOR THE RESPECTIVE AIRFIELD LIGHT FIXTURES ON RUNWAY 17-35.

GENERAL NOTES:

QUANTITIES
PAYMENT WILL BE MADE UNDER THE ITEM NUMBERS, DESCRIPTIONS AND UNITS NOTED IN THE ABOVE TABLE IN ACCORDANCE WITH THE BASIS OF PAYMENT FOR EACH RESPECTIVE WORK ITEM COMPLETED AND ACCEPTED BY THE ENGINEER.

CERTIFIED PAYROLLS
THE RESIDENT ENGINEER CANNOT FORWARD CONSTRUCTION REPORTS TO THE ILLINOIS DIVISION OF AERONAUTICS FOR PROCESSING UNTIL ALL CERTIFIED PAYROLLS FOR THE PERIOD HAVE BEEN RECEIVED.

MATERIAL CERTIFICATIONS
MATERIALS TO BE INCORPORATED INTO THE PROJECT CANNOT BE USED WITHOUT PRIOR APPROVAL. ALL MATERIALS TO BE USED IN THE PROJECT MUST BE SUBMITTED TO THE RESIDENT ENGINEER FOR APPROVAL. USE OF MATERIALS WITHOUT PRIOR APPROVAL AND ULTIMATELY DETERMINED TO BE UNACCEPTABLE BY THE ILLINOIS DIVISION OF AERONAUTICS ARE SUBJECT TO REMOVAL AND/OR NON-PAYMENT.

RUNWAY CLOSURE SCHEDULING
THE CONTRACTOR SHALL NOTIFY THE AIRPORT MANAGER SEVEN DAYS IN ADVANCE OF THE COMMENCEMENT OF WORK, WHICH WOULD NECESSITATE THE CLOSING OF THE RUNWAY OR CLOSING OF THE AIRPORT.

INDEX TO SHEETS

SHEET NO.	DESCRIPTION
1	COVER SHEET
2	SUMMARY OF QUANTITIES AND INDEX TO SHEETS
3	PROPOSED SAFETY PLAN
4	PROPOSED AREA 1 STAGING PLAN
5	PROPOSED AREA 2 STAGING PLAN
6	PROPOSED AREA 3 STAGING PLAN
7	PROPOSED AREA 4 STAGING PLAN
8	CONSTRUCTION SAFETY DETAILS AND NOTES
9	EXISTING ELECTRICAL PLAN RUNWAY 9-27 STA. 119+00 TO STA. 130+00
10	EXISTING ELECTRICAL PLAN RUNWAY 9-27 STA. 130+00 TO STA. 143+00
11	EXISTING ELECTRICAL PLAN RUNWAY 9-27 STA. 143+00 TO STA. 156+00
12	EXISTING ELECTRICAL PLAN RUNWAY 9-27 STA. 156+00 TO STA. 169+00
13	EXISTING ELECTRICAL PLAN TAXIWAY A (NORTH)
14	EXISTING ELECTRICAL PLAN TAXIWAY A (SOUTH)
15	EXISTING ELECTRICAL PLAN RUNWAY 17-35 STA. 12+50 TO STA. 25+00
16	EXISTING ELECTRICAL PLAN RUNWAY 17-35 STA. 25+00 TO STA. 38+00
17	EXISTING ELECTRICAL PLAN RUNWAY 17-35 STA. 38+00 TO STA. 48+00
18	PROPOSED ELECTRICAL PLAN RUNWAY 9-27 STA. 119+00 TO STA. 130+00
19	PROPOSED ELECTRICAL PLAN RUNWAY 9-27 STA. 130+00 TO STA. 143+00
20	PROPOSED ELECTRICAL PLAN RUNWAY 9-27 STA. 143+00 TO STA. 156+00
21	PROPOSED ELECTRICAL PLAN RUNWAY 9-27 STA. 156+00 TO STA. 169+00
22	PROPOSED ELECTRICAL PLAN TAXIWAY A (NORTH)
23	PROPOSED ELECTRICAL PLAN TAXIWAY A (SOUTH)
24	PROPOSED ELECTRICAL PLAN RUNWAY 17-35 STA. 12+50 TO STA. 25+00
25	PROPOSED ELECTRICAL PLAN RUNWAY 17-35 STA. 25+00 TO STA. 38+00
26	PROPOSED ELECTRICAL PLAN RUNWAY 17-35 STA. 38+00 TO STA. 48+00
27	AIRFIELD LIGHTING NOTES AND SCHEDULES
28	LIGHT LOCATION TABLE FOR RUNWAY 9-27 CIRCUIT
29	LIGHT LOCATION TABLE FOR RUNWAY 17-35 CIRCUIT
30	LIGHT LOCATION TABLE FOR TAXIWAYS
31	ELECTRICAL DETAILS SHEET 1
32	ELECTRICAL DETAILS SHEET 2
33	ELECTRICAL DETAILS SHEET 3
34	ELECTRICAL DETAILS SHEET 4
35	ELECTRICAL NOTES SHEET 1
36	ELECTRICAL NOTES SHEET 2
37	ELECTRICAL LEGEND AND ABBREVIATIONS
38	EXISTING ELECTRICAL ONE LINE DIAGRAM FOR VAULT AND AIRFIELD
39	VAULT FLOOR PLAN
40	PROPOSED ELECTRICAL ONE LINE DIAGRAM FOR VAULT AND AIRFIELD
41	AIRFIELD LIGHTING CONTROL WIRING SCHEMATIC
42	LIGHTING CONTACTOR PANEL SCHEMATIC
43	LIGHTING CONTACTOR PANEL DETAIL
44	HIGH VOLTAGE WIRING SCHEMATICS
45	LEGEND PLATE SCHEDULES
46	CCR GROUND BUS RISER
47	GROUNDING DETAILS
48	GROUNDING NOTES

UTILITY NOTE

THE LOCATION, SIZE, AND TYPE OF MATERIAL OF EXISTING UNDERGROUND AND/OR ABOVEGROUND UTILITIES INDICATED ON THE PLANS ARE NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY WHATSOEVER IN RESPECT TO THE ACCURACY, COMPLETENESS, OR SUFFICIENCY OF THE INFORMATION. THERE IS NO GUARANTEE, EITHER EXPRESSED OR IMPLIED, THAT THE LOCATIONS, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND UTILITIES INDICATED ARE REPRESENTATIVE OF THOSE TO BE ENCOUNTERED IN THE CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ACTUAL LOCATION OF ALL SUCH FACILITIES, INCLUDING SERVICE CONNECTIONS TO UNDERGROUND UTILITIES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES OF HIS OPERATIONAL PLANS AND SHALL OBTAIN FROM THE RESPECTIVE UTILITY COMPANIES DETAILED INFORMATION AND ASSISTANCE RELATIVE TO THE LOCATION OF THEIR FACILITIES AND THE WORKING SCHEDULE OF THE COMPANIES FOR REMOVAL OR ADJUSTMENT WHERE REQUIRED. IN THE EVENT AN UNEXPECTED UTILITY INTERFERENCE IS ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY COMPANY OF JURISDICTION. THE OWNER'S REPRESENTATIVE AND/OR THE RESIDENT ENGINEER SHALL ALSO BE IMMEDIATELY NOTIFIED. ANY DAMAGE TO SUCH MAINS AND SERVICES SHALL BE RESTORED TO SERVICE AT ONCE AND PAID FOR BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CONTRACT. ALL UTILITY CABLES AND LINES SHALL BE LOCATED BY THE RESPECTIVE UTILITY. CONTACT JULIE (JOINT UTILITY LOCATION INFORMATION FOR EXCAVATORS) FOR UTILITY INFORMATION, PHONE: 1-800-892-0123. CONTACT THE FAA (FEDERAL AVIATION ADMINISTRATION) FOR ASSISTANCE IN LOCATING FAA CABLES AND UTILITIES. LOCATION OF FAA POWER, CONTROL, AND COMMUNICATION CABLES SHALL BE COORDINATED WITH AND/OR LOCATED BY THE FAA. ALSO CONTACT AIRPORT DIRECTOR/MANAGER AND AIRPORT PERSONNEL FOR ASSISTANCE IN LOCATING UNDERGROUND AIRPORT CABLES AND/OR UTILITIES. ALSO COORDINATE WORK WITH ALL ABOVEGROUND UTILITIES.

J.U.L.I.E. INFORMATION

COUNTY.....CRAWFORD
CITY.....ROBINSON
TOWNSHIP.....LAMONTE
SECTION NO.....28, 29 & 33
ADDRESS.....CRAWFORD COUNTY AIRPORT
P.O. BOX 6
ROBINSON, ILLINOIS 62454



Know what's below.
Call before you dig.

REPLACE MIRL AND
MITL SYSTEMS

SUMMARY OF QUANTITIES
AND INDEX TO SHEETS

MAR 25, 2014 1:07 PM H:\GLO00382
pw:\sps-svc306\hanson.dom\hanson_projects\Documents\13\jobs\13A0058\13A0058D\CAD\Airport\Sheet\G-002-FLP

Hanson Proj. No. 13A0058	Revision	DATE
Filename G-002-FLP.dwg		
Scale NOT TO SCALE		
Date 03/07/14		
LAYOUT KNL 09/09/13		
DRAWN BAK 07/23/13		
REVIEWED CAH 03/07/14		

HANSON
Professional Services Inc. 2014
1525 South Sixth Street
Springfield, Illinois 62703-2986
Ph: (217) 788-2450 Fax: (217) 788-2503
www.hanson-inc.com
Offices Nationwide

CRAWFORD COUNTY AIRPORT
ROBINSON
CRAWFORD COUNTY, ILLINOIS

IL PROJ.: RSY-4334 S.B.C. PROJ.: 3-17-SBGP-XX

PROPOSED SAFETY PLAN

GENERAL - THE CRAWFORD COUNTY AIRPORT IS COMPRISED OF TWO RUNWAYS. THE PROPOSED CONSTRUCTION WILL NECESSITATE CLOSURES OF BOTH RUNWAYS AND ALL THE TAXIWAYS AT TIMES DURING THE PROJECT.

RUNWAY 9-27 WILL BE CLOSED ANY TIME THE CONTRACTOR IS WORKING WITHIN 250' OF THE RUNWAY CENTERLINE. RUNWAY 17-35 WILL BE CLOSED ANYTIME THE CONTRACTOR IS WORKING WITHIN 75' OF THE RUNWAY CENTERLINE. ANY TAXIWAY WILL BE CLOSED WHEN THE CONTRACTOR IS WORKING WITHIN 66' OF THE RESPECTIVE TAXIWAY CENTERLINE (TAXIWAY OBJECT FREE AREA). THE CONTRACTOR SHALL COORDINATE ALL CLOSURES WITH THE AIRPORT MANAGER.

THE CONTRACTOR AND HIS EMPLOYEES WILL BE RESTRICTED TO THE WORK AREAS AND ALL OTHER AREAS OF THE AIRPORT ARE "OFF LIMITS" TO THEM.

ALL CONSTRUCTION/OPERATIONS ARE TO BE PERFORMED IN ACCORDANCE WITH FAA ADVISORY CIRCULAR (AC) 150/5370-2F "OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION" AND AC 150/5300-13A "AIRPORT DESIGN".

ALL CONSTRUCTION EQUIPMENT ON THE AIRPORT SHALL BE MARKED, LIGHTED AND/OR FLAGGED IN ACCORDANCE WITH AC 150/5210-5 AND 70/7460-1.

IDENTIFICATION - WHEN THE CONTRACTORS VEHICLES AND EQUIPMENT ARE ON THE AIRPORT THEY SHALL BE PROPERLY MARKED WITH THREE (3') FOOT SQUARE CHECKERED FLAGS (INTERNATIONAL ORANGE AND WHITE). THE CONTRACTOR WILL ALSO PROVIDE WORKERS WITH SOME TYPE OF TAG OR GARMENT TO IDENTIFY THE PERSON AS BEING PART OF THE CONSTRUCTION CREW.

RADIO CONTROL - THE CONTRACTOR WILL BE REQUIRED TO BE IN TWO-WAY RADIO CONTACT (123.00 MHz.) WITH THE AIRPORT UNICOM. THIS WILL KEEP THE CONTRACTOR IN CONSTANT CONTACT WITH THE CRAWFORD COUNTY AIRPORT AND ENABLE THE AIRPORT TO IMMEDIATELY CONTACT THE CONTRACTOR IN CASE OF AN AERONAUTIC EMERGENCY THAT WOULD REQUIRE ACTION BY THE CONTRACTOR AND/OR HIS PERSONNEL.

BARRICADES AND TRAFFIC CONES

IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO PLACE AND MAINTAIN BARRICADES AND TRAFFIC CONES AS SHOWN ON THE PROPOSED STAGING PLAN SHEETS AND/OR AS DIRECTED BY THE AIRPORT MANAGER.

AIRCRAFT OPERATION LINE

THE CONTRACTOR WILL LOCATE THIS LINE AT THE START OF CONSTRUCTION AND WILL PLACE FLAGGED LATHE EVERY 150' ALONG IT. THIS LINE WILL BE THE LIMITS THAT ALL CONTRACTOR PERSONNEL MAY VENTURE WHEN A RUNWAY IS NOT CLOSED. THE CONTRACTOR WILL MAINTAIN THE LATHE LINE FOR RUNWAYS.

EROSION CONTROL

THIS PROJECT WILL DISTURB LESS THAN 1 ACRE OF LAND, THEREFORE NO N.P.D.E.S. PERMIT WILL BE REQUIRED.

CRITICAL POINT DATA

CRITICAL POINT NO. 1
 LATITUDE: 39° 00' 58.50"
 LONGITUDE: 87° 38' 47.35"
 ELEVATION: 454.56 M.S.L.

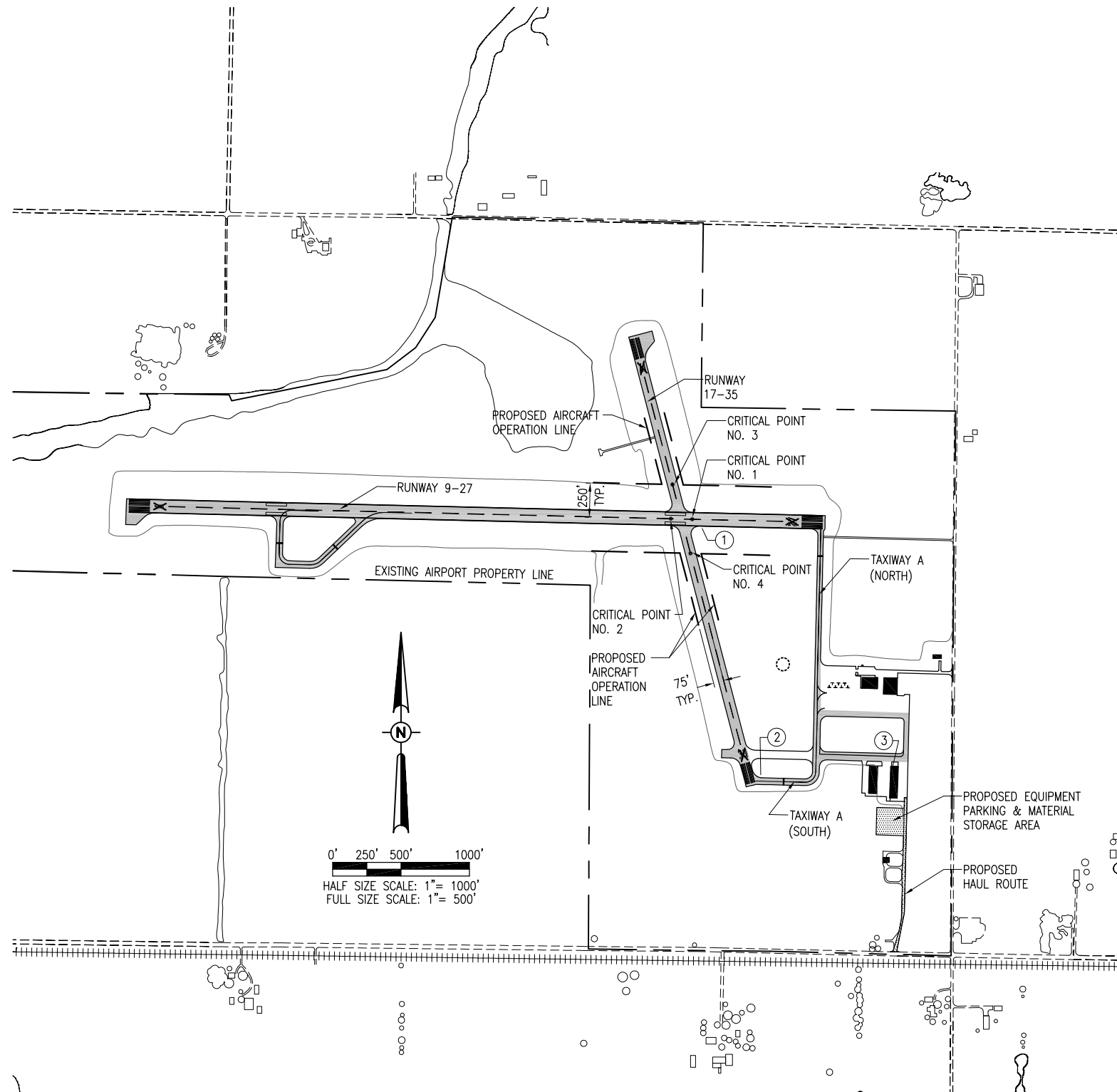
CRITICAL POINT NO. 2
 LATITUDE: 39° 00' 58.61"
 LONGITUDE: 87° 38' 49.24"
 ELEVATION: 454.44 M.S.L.

CRITICAL POINT NO. 3
 LATITUDE: 39° 01' 00.95"
 LONGITUDE: 87° 38' 49.03"
 ELEVATION: 454.41 M.S.L.

CRITICAL POINT NO. 4
 LATITUDE: 39° 00' 56.15"
 LONGITUDE: 87° 38' 47.48"
 ELEVATION: 453.80 M.S.L.

BENCHMARK DATA

NO.	DESCRIPTION	NORTHERING	EASTING	ELEV.
1	"ROBPORT" - STAINLESS STEEL ROD IN SLEEVE	856,250.981	1,179,453.934	452.56
2	"ROBPORT AZ MK" - STAINLESS STEEL ROD IN SLEEVE	854,486.332	1,179,930.019	450.00
3	CHISELED SQUARE - NW COR. CONC. HANGAR FOUNDATION			450.29



SCOPE OF WORK

THIS PROJECT CONSISTS OF REPLACING THE MEDIUM INTENSITY RUNWAY LIGHTS ON RUNWAY 9-27 AND RUNWAY 17-35, REPLACING THE MEDIUM INTENSITY TAXIWAY LIGHTING ON THE ASSOCIATED TAXIWAYS, AND THE ASSOCIATED CABLING, DUCT WORK AND VAULT WORK.

AIRPORT SECURITY NOTE

AIRPORT SECURITY WILL BE MAINTAINED AT ALL TIMES.

HEIGHT OF CONSTRUCTION EQUIPMENT

THE MAXIMUM ANTICIPATED HEIGHT OF THE CONSTRUCTION EQUIPMENT WILL BE 25 FEET. THE TALLEST EQUIPMENT IS EXPECTED TO BE A CONCRETE TRUCK OR A LINE TRUCK.

HAUL ROUTE, VEHICLE PARKING, EQUIPMENT PARKING AND MATERIAL STORAGE

THE CONTRACTOR WILL USE THE DESIGNATED CONSTRUCTION ACCESS AND HAUL ROUTE SHOWN ON THIS SHEET.

CONTRACTOR SITE PARKING, EQUIPMENT PARKING AND MATERIAL STORAGE WILL BE AS SHOWN ON THIS SHEET.

THE CONTRACTOR WILL BE REQUIRED TO MAINTAIN THE CONSTRUCTION ACCESS, HAUL ROUTE, VEHICLE PARKING, EQUIPMENT PARKING AND MATERIAL STORAGE AREAS THROUGHOUT THE COURSE OF THE PROJECT. ANY AREAS DAMAGED OUTSIDE OF THESE AREAS WILL BE REPAIRED BY THE CONTRACTOR AND AT THE CONTRACTOR'S OWN EXPENSE. AT THE CONCLUSION OF THE PROJECT THE CONTRACTOR WILL RESTORE THESE AREAS TO THEIR PRE-CONSTRUCTION CONDITION, INCLUDING GRADING, FERTILIZING, SEEDING AND MULCHING FOR NON-PAVED AREAS. RESTORATION OF THESE AREAS WILL BE INCLUDED IN THE COST OF ITEM AR150540, HAUL ROUTE, AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

150-ENGINEER'S FIELD OFFICE NOTES

THE PROPOSED ENGINEER'S FIELD OFFICE WILL BE FURNISHED, MAINTAINED, AND REMOVED IN ACCORDANCE WITH ITEM AR150510 "ENGINEER'S FIELD OFFICE" AS STATED ON PAGE 49 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION OF AIRPORTS APRIL 1, 2012.

THE LOCATION OF THE PROPOSED ENGINEER'S FIELD OFFICE WILL BE DETERMINED AT THE PRE-CONSTRUCTION MEETING.

THE ENGINEERING FIRM WILL MAKE PAYMENT FOR ALL LONG DISTANCE TELEPHONE CALLS IN EXCESS OF ONE HUNDRED DOLLARS (\$100.00) PER MONTH.

THE CONTRACTOR WILL FURNISH A WIRELESS PHONE TO THE RESIDENT ENGINEER FOR HIS EXCLUSIVE USE FOR THE DURATION OF THIS PROJECT. THE RESIDENT ENGINEER WILL USE THIS PHONE FOR PROJECT BUSINESS ONLY. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL CHARGES ASSOCIATED WITH THIS CELL PHONE.

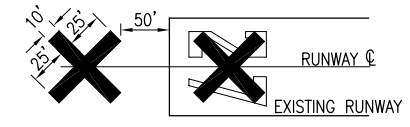
THE PROPOSED ENGINEER'S FIELD OFFICE WILL BE PAID FOR UNDER ITEMS: AR150510 ENGINEER'S FIELD OFFICE ____ 1 L.S.

APR 01, 2014 9:45 AM HAGL000382 p:\s\sp\svr306\hanson.dom\hanson_projects\Documents\13\lobs\1340058\1340058D\CAD\Airport\Sheet\G-003-SFY

LEGEND

- EXISTING IMPROVEMENTS
- PROPOSED IMPROVEMENTS
- EXISTING BUILDINGS
- PROPOSED HAUL ROUTE AND EQUIPMENT PARKING AREA
- PROPOSED BENCHMARK

REVISION									
DATE									
<p>CRAWFORD COUNTY AIRPORT ROBINSON CRAWFORD COUNTY, ILLINOIS</p> <p style="font-size: small;">S.B.G. PROJ.: 3-17-SBGP-XX I.L. PROJ.: RSY-4334</p>									
Hanson Proj. No. 1340058	Filename G-003-SFY.DWG	Scale 1" = 500'	Date 03/07/14	LAYOUT KNL 09/09/13	DRAWN BAK 09/09/13	REVIEWED CAH 03/07/14	 © Copyright Hanson Professional Services Inc. 2014 Hanson Professional Services Inc. 1525 South Sixth Street Springfield, Illinois 62703-2986 Ph: (217) 788-2450 Fax: (217) 788-2503 www.hanson-inc.com Offices Nationwide		
<p>REPLACE MRL AND MITL SYSTEMS</p> <p style="font-size: x-small;">PROPOSED SAFETY PLAN</p>				<p style="font-size: 2em; font-weight: bold;">3</p> <p style="font-size: x-small;">3 of 48 sheets</p>					



YELLOW IN COLOR
DETAIL OF CROSS FOR CLOSED RUNWAY

NOTE:
"NOT TO SCALE"
COST OF CONSTRUCTING, PLACING, MAINTAINING AND REMOVING CROSSES WILL BE CONSIDERED INCIDENTAL TO THE CONTRACT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED. THE CROSSES WILL BE YELLOW IN COLOR AND SHALL BE MADE OF A SUITABLE MATERIAL AS APPROVED BY THE AIRPORT MANAGER. THE CROSSES WILL BE PLACED EITHER OVER THE NUMERAL OR OFF THE END OF THE RUNWAY AS DETAILED AND SECURED IN A MANNER APPROVED BY THE MANAGER. THE PROPOSED CROSSES WILL BE PLACED EACH DAY THE RUNWAY IS CLOSED AND REMOVED WHEN THE RUNWAY IS RE-OPENED. THE CONTRACTOR WILL BE RESPONSIBLE FOR THE PLACEMENT AND REMOVAL OF THE CROSSES. NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

PROPOSED AREA 1 STAGING NOTES

AREA 1 STAGE CONSTRUCTION SHALL CONSIST OF ALL WORK ON RUNWAY 9-27 THAT IS LOCATED OUTSIDE OF THE RUNWAY 17-35 SAFETY AREA (75' FROM ITS CENTERLINE). ALSO INCLUDED IN THIS STAGE WILL BE ALL WORK ON TAXIWAY A (NORTH).

IN ORDER TO CLOSE RUNWAY 9-27 THE CONTRACTOR WILL PLACE CROSSES OVER THE NUMERALS AS DETAILED ON THIS SHEET, AND PLACE BARRICADES AS SHOWN ON THIS SHEET. THE AIRPORT MANAGER WILL ISSUE A NOTICE TO AIRMEN (NOTAM) STATING RUNWAY 9-27 IS CLOSED. WHEN THIS HAS BEEN ACCOMPLISHED THE CONTRACTOR WILL BE ALLOWED TO START WORK ON RUNWAY 9-27 AND TAXIWAY A (NORTH).

THE CONTRACTOR WILL BE ALLOWED TO CLOSE RUNWAY 9-27 AND TAXIWAY A (NORTH) FOR THE CONSTRUCTION WEEK. AT THE END OF THE CONSTRUCTION WEEK HE MUST RE-OPEN RUNWAY 9-27 AND TAXIWAY A (NORTH) FOR "DAYTIME OPERATIONS ONLY".

OPEN TRENCHES OR EXCAVATIONS ARE NOT PERMITTED WITHIN THE RUNWAY SAFETY AREA OR TAXIWAY OBJECT FREE AREA WHILE THE RESPECTIVE RUNWAY OR TAXIWAY IS OPEN.

THE CONTRACTOR WILL SMOOTH GRADE ALL AREAS WITHIN THE RUNWAY SAFETY AREA AND THE TAXIWAY OBJECT FREE AREA TO THE SATISFACTION OF THE RESIDENT ENGINEER PRIOR TO RE-OPENING RUNWAY 9-27 AND TAXIWAY A (NORTH). IF THE RUNWAY AND/OR TAXIWAY A (NORTH) IS RE-OPENED BEFORE EXCAVATIONS ARE BACKFILLED; COVER THE EXCAVATIONS APPROPRIATELY. COVERINGS FOR OPEN TRENCHES OR EXCAVATIONS MUST BE OF SUFFICIENT STRENGTH TO SUPPORT THE HEAVIEST AIRCRAFT OPERATING ON RUNWAY 9-27.

THE CONTRACTOR WILL MOVE ALL EQUIPMENT INTO THE EQUIPMENT PARKING AND MATERIAL STORAGE AREA OR AT LEAST 410 FEET FROM RUNWAY 9-27 CENTERLINE OR 70' FROM TAXIWAY A (NORTH) CENTERLINE PRIOR TO RE-OPENING RUNWAY 9-27 AND/OR TAXIWAY A (NORTH).

THE CONTRACTOR MUST COMPLETE ALL OF THE WORK WITHIN THE STAGE 1 WORK AREA BEFORE HE WILL BE ALLOWED TO MOVE TO THE STAGE 2 WORK AREA.

THE CONTRACTOR AND HIS EMPLOYEES WILL BE RESTRICTED TO THE WORK AREAS AND ALL OTHER AREAS OF THE AIRPORT ARE "OFF LIMITS" TO THEM.

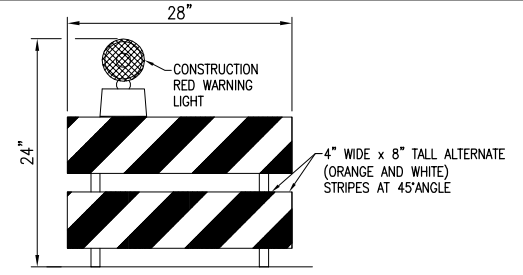
ALL CONSTRUCTION/OPERATIONS ARE TO BE PERFORMED IN ACCORDANCE WITH FAA ADVISORY CIRCULAR (AC) 150/5370-2F "OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION" AND AC 150/5300-13A "AIRPORT DESIGN".

ALL CONSTRUCTION EQUIPMENT ON THE AIRPORT SHALL BE MARKED, LIGHTED AND/OR FLAGGED IN ACCORDANCE WITH AC 150/5210-5 AND 70/7460-1.

ALL WORK INCLUDED IN OPENING AND CLOSING RUNWAY 9-27 AND TAXIWAY A (NORTH) WILL BE CONSIDERED INCIDENTAL TO THE PROJECT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

LEGEND

- EXISTING IMPROVEMENTS
- PROPOSED STAGE 1 IMPROVEMENTS
- EXISTING BUILDINGS
- PROPOSED HAUL ROUTE AND EQUIPMENT PARKING AREA
- PROPOSED CROSS
- PROPOSED STAGE 1 BARRICADES



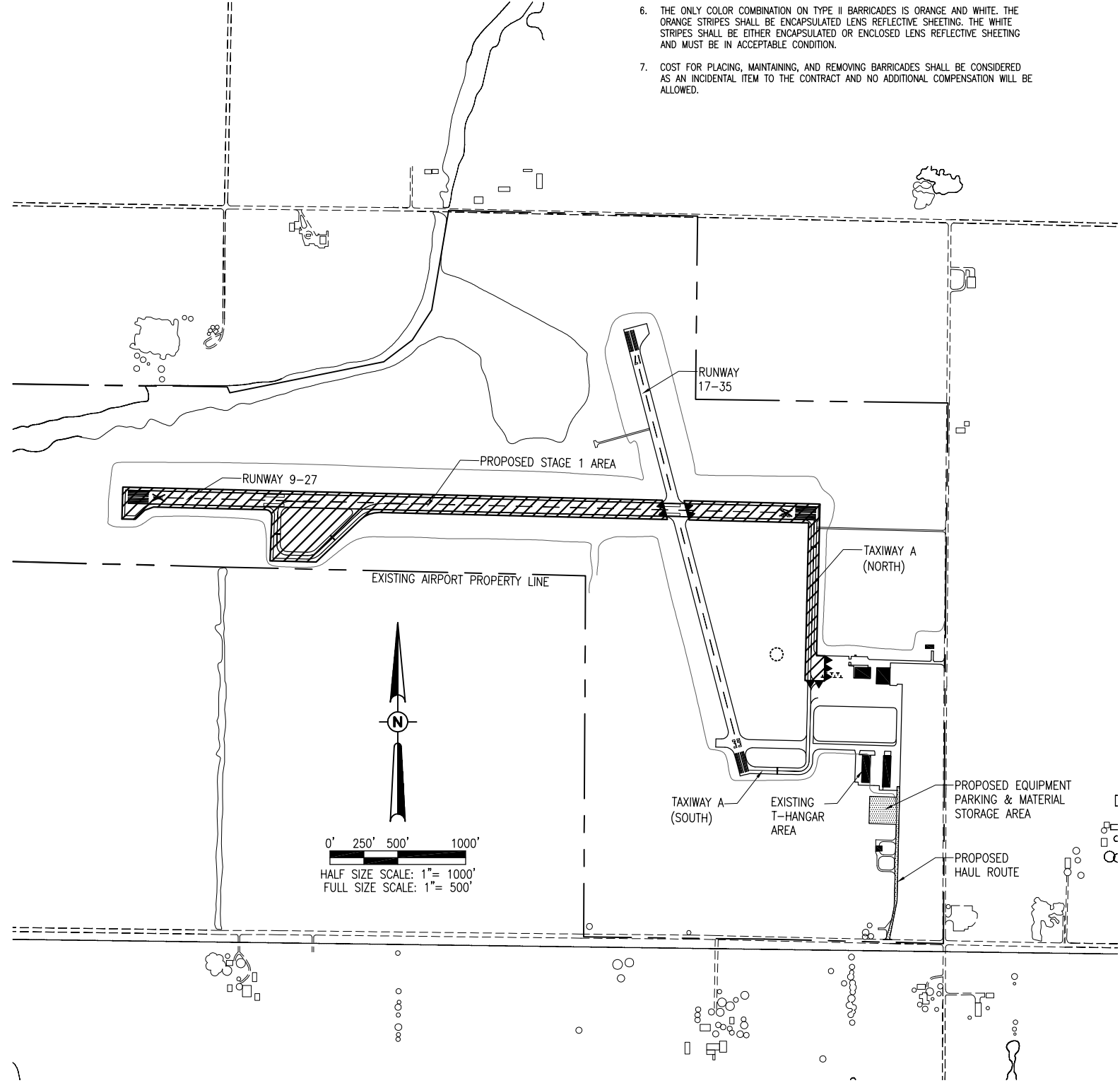
MODIFIED TYPE II BARRICADE
NOT TO SCALE

BARRICADE NOTES

1. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO PLACE AND MAINTAIN BARRICADES AS SHOWN ON THIS SHEET AND AS DIRECTED BY THE AIRPORT MANAGER.
2. MODIFIED TYPE II BARRICADES SHALL BE SPACED END TO END THE WIDTH OF THE PAVEMENT IN 4' INCREMENTS AS DIRECTED BY THE ENGINEER. BARRICADES ARE TO BE SET BACK 100' FROM THE ACTIVE TAXIWAY CENTERLINE, 75' FROM THE ACTIVE RUNWAY CENTERLINE OR AS SHOWN ON THE PLANS.
3. CONSTRUCTION RED WARNING LIGHT: THESE ARE PORTABLE, LENS DIRECTED, ENCLOSED LIGHTS. THE COLOR OF THE LIGHT EMITTED SHALL BE RED. THEY MAY BE USED IN EITHER A STEADY BURN (TYPE C) OR LOW INTENSITY FLASHING MODE (TYPE A) UNLESS NOTED OTHERWISE.
4. THE LIGHTING SHALL BE MAINTAINED IN OPERATION DURING THE HOURS OF DARKNESS BETWEEN 1/2 HOUR AFTER SUNSET AND 1/2 HOUR BEFORE SUNRISE AND WHEN CONDITIONS EXIST WHICH TEND TO OBSCURE VISION.
5. BARRICADES SHALL BE SECURED TO THE GROUND BY APPROVED METHODS TO PREVENT MOVEMENT BY PROP WASH, JET BLAST OR OTHER WIND CURRENTS.
6. THE ONLY COLOR COMBINATION ON TYPE II BARRICADES IS ORANGE AND WHITE. THE ORANGE STRIPES SHALL BE ENCAPSULATED LENS REFLECTIVE SHEETING. THE WHITE STRIPES SHALL BE EITHER ENCAPSULATED OR ENCLOSED LENS REFLECTIVE SHEETING AND MUST BE IN ACCEPTABLE CONDITION.
7. COST FOR PLACING, MAINTAINING, AND REMOVING BARRICADES SHALL BE CONSIDERED AS AN INCIDENTAL ITEM TO THE CONTRACT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

SAFETY NOTES

1. FOLLOWING ARE THE CONSTRUCTION SAFETY PROCEDURES THAT THE CONTRACTOR SHALL FOLLOW THROUGHOUT THIS PROJECT. ADDITIONAL REQUIREMENTS ARE SHOWN ON THE SAFETY AND PHASING NOTES AND DETAILS SHEET.
2. ALL PROVISIONS OF THE LATEST EDITION OF FAA ADVISORY CIRCULAR AC 150/5370-2 (CURRENT EDITION), "OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION", APPLY TO THIS CONTRACT, EXCEPT AS MODIFIED BY THIS SAFETY PLAN, OR AS MODIFIED BY THE OWNER THROUGH THE RESIDENT ENGINEER AT THE PRECONSTRUCTION CONFERENCE, OR DURING THE COURSE OF THE CONTRACT.
3. THE CONTRACTORS SHALL MINIMIZE DISRUPTION OF STANDARD OPERATING PROCEDURES FOR AERONAUTICAL ACTIVITY BY REMAINING WITHIN THE PRESCRIBED STAGING, CONSTRUCTION, AND PHASING AREAS PRESENTED ON THE PROJECT SAFETY AND PHASING PLANS.
4. NO UNAUTHORIZED PERSONNEL SHALL ENTER ANY AREA OF THE AIRPORT THAT COULD POTENTIALLY BE HAZARDOUS. THE ENGINEER, ENGINEER'S REPRESENTATIVE AND/OR AIRPORT MANAGER RESERVE THE RIGHT TO SUSPEND OPERATIONS IN ORDER TO MAINTAIN SAFETY AT THE AIRPORT.
5. CONTRACTOR EQUIPMENT, VEHICLES, AND PROJECT MATERIALS SHALL BE STORED AT THE STAGING AREA SHOWN ON THE PLAN VIEW, EXCEPT AS OTHERWISE PROVIDED FOR AT THE PRECONSTRUCTION CONFERENCE.
6. ALL CONSTRUCTION EQUIPMENT OPERATING IN THE PRESCRIBED CONSTRUCTION AREA IS REQUIRED TO DISPLAY A CHECKERBOARD FLAG (LOCATED OR A ROTATING BEACON (STROBE) AS SPECIFIED IN AC 150/5210-5, "PAINTING, MARKING, AND LIGHTING OF VEHICLES USED ON AN AIRPORT" LATEST EDITION.
7. NO CONSTRUCTION MATERIAL STOCKPILES SHALL BE LOCATED WITHIN 250' (RUNWAY 17-35) OR 400' (RUNWAY 9-27) OF ANY ACTIVE RUNWAY, WITHIN 66' OF ANY OTHER ACTIVE AIRPORT OPERATIONS AREA, OR PENETRATE A PART 77 IMAGINARY SURFACE (PROVIDED BY THE ENGINEER) EXTENDING OUT AND UPWARDS FROM ALL SIDES OF AN ACTIVE RUNWAY.
8. CLOSED AIRFIELD PHASING AREAS, OPEN TRENCHES, AND STOCKPILED MATERIALS AT THE CONSTRUCTION SITE SHALL BE PROMINENTLY MARKED WITH LIGHTED BARRICADES WITH STEADY BURNING OR FLASHING RED LIGHTS AS SPECIFIED IN 150/5370-2, "OPERATIONAL SAFETY ON AIRPORT DURING CONSTRUCTION, LATEST EDITION. LIGHTED BARRICADES MUST BE NO TALLER THAN 18" (EXCLUSIVE OF SUPPLEMENTARY LIGHTS AND FLAGS) ON THE TAXIWAYS AND COMPLY WITH ADVISORY CIRCULAR 150/5370-2, LATEST EDITION. CONTRACTOR SHALL NIGHT CHECK BARRICADES DAILY FOR PROPER OPERATION.
9. NO OPEN TRENCHES WITHIN 250' (RUNWAY 17-35) OR 400' (RUNWAY 9-27) OF AN ACTIVE RUNWAY CENTERLINE OR WITHIN 66' OF ANY AIRPORT OPERATIONS AREA WILL BE PERMITTED UNLESS PROPERLY MARKED. OTHER TRENCHES SHALL BE MAINTAINED SAFE, I.E., BARRICADED OR COVERED WITH STEEL PLATES IN ALL OTHER AREAS.
10. OPEN TRENCHES, EXCAVATIONS, AND STOCKPILED MATERIALS AT THE CONSTRUCTION SITE SHOULD BE PROMINENTLY MARKED WITH ORANGE FLAGS AND LIGHTED WITH FLASHING YELLOW LIGHTS DURING HOURS OF RESTRICTED VISIBILITY AND/OR DARKNESS.
11. NO OPEN FLAME WELDING OR TORCH CUTTING OPERATION IS PERMITTED UNLESS ADEQUATE FIRE AND SAFETY PRECAUTIONS ARE PROVIDED AND HAVE BEEN APPROVED BY THE AIRPORT MANAGER. NO FLARE POTS ARE ALLOWED ON THE PROJECT.
12. SOIL, DEBRIS, AND LOOSE MATERIAL DROPPED OR TRUCKED ONTO AIRPORT ROADS, TAXIWAYS, AND SOO SURFACES, OR WHICH CAN BE BLOWN ONTO SUCH SURFACES, SHALL BE IMMEDIATELY SWEEP, PICKED UP AND REMOVED, OR PLACED INTO CLOSED CONTAINERS. ANY DAMAGE TO AIRPORT PROPERTY SHALL BE REPAIRED IMMEDIATELY AT NO COST TO THE OWNER.
13. EACH CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND MAINTAINING AIRPORT LIGHTING AND NAVIGATIONAL ELECTRICAL SYSTEMS DURING CONSTRUCTION. A CONTACT PERSON AND TELEPHONE NUMBER FOR 24 HOUR EMERGENCY IMMEDIATE REPAIR SHALL BE SUBMITTED TO THE AIRPORT MANAGER AND ENGINEER. HAUL ROUTES CROSSING PAVEMENT, DRAINAGE, MISCELLANEOUS STRUCTURES AND/OR AIRFIELD CABLES SHALL BE PROTECTED FROM DAMAGE.
14. ALL AIRCRAFT AND AIRPORT OPERATIONS HAVE THE RIGHT-OF-WAY. CONTRACTOR TO YIELD TO VEHICLES AND REMAIN CLEAR AT ALL TIMES.
15. CONTRACTOR SHALL PLACE, SECURE, AND MAINTAIN LIGHTED BARRICADES AND CLOSURE CROSSES WHEN A RUNWAY/TAXIWAY/APRON IS CLOSED OR AS REQUIRED BY THE PLANS AND DESIGNATED BY THE ENGINEER.
16. CONTRACTOR SHALL MARK HAZARDOUS AREA WITH STEADY-BURNING OR FLASHING RED AND YELLOW LIGHTS DURING PERIODS OF LOW VISIBILITY AS REQUIRED.
17. THE CONTRACTOR SHALL PERIODICALLY PERFORM ONSITE INSPECTIONS THROUGHOUT THE DURATION OF THE PROJECT WITH THE IMMEDIATE REMEDY OF ANY DIFFERENCES, WHETHER CAUSED BY NEGLIGENCE, OVERSIGHT, OR PROJECT SCOPE CHANGE.
18. CONTRACTOR SHALL MOVE MAINTENANCE OF TRAFFIC COMPONENTS AT THE WRITTEN DIRECTION OF THE ENGINEER AT NO ADDITIONAL COST.
19. CONTRACTOR SHALL NOT REMOVE THE BARRICADES WITHOUT THE APPROVAL BY THE ENGINEER.
20. CONTRACTOR SHALL MAINTAIN FLASHERS, SIGNS AND/OR BARRICADES AS REQUIRED BY THE PLANS, CITY OR COUNTY REGULATIONS OR CONTRACTOR ACTIVITIES. CONTRACTOR SHALL OBTAIN ANY AND ALL REQUIRED LOCAL PERMITS UNLESS SPECIFIED OTHERWISE.
21. THE CONTRACTOR SHALL UTILIZE WATER AND/OR CHEMICALS APPROVED BY THE ENGINEER AS NECESSARY TO CONTROL DUST.
22. UNLESS SPECIFIED OTHERWISE, COST FOR THE ABOVE IS TO BE CONSIDERED INCIDENTAL TO THE PROJECT. SEPARATE PAYMENT SHALL NOT BE MADE.



MAR 25, 2014 2:12 PM H:\GLO00382... Projects\Documents\131058\1310581\3100581\3100581.dwg (Sheet) G-004-STG

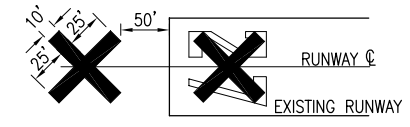
REVISION	
DATE	

CRAWFORD COUNTY AIRPORT
ROBINSON
CRAWFORD COUNTY, ILLINOIS

Hanson Proj. No. 13A0058	09/09/13
Filename: G-004-STG.dwg	BAK 09/09/13
Scale 1" = 500'	REVIEWED CAH/BSS 03/07/14
Date 03/07/14	

HANSON
Professional Services Inc. 2014
1525 South Sixth Street
Springfield, Illinois 62703-2886
Ph: (217) 788-2450 Fax: (217) 788-2503
www.hanson-inc.com
Offices Nationwide

REPLACE MRL AND MITL SYSTEMS
PROPOSED AREA 1 STAGING PLAN



YELLOW IN COLOR
DETAIL OF CROSS FOR CLOSED RUNWAY
"NOT TO SCALE"

NOTE:

COST OF CONSTRUCTING, PLACING, MAINTAINING AND REMOVING CROSSES WILL BE CONSIDERED INCIDENTAL TO THE CONTRACT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED. THE CROSSES WILL BE YELLOW IN COLOR AND SHALL BE MADE OF A SUITABLE MATERIAL AS APPROVED BY THE AIRPORT MANAGER. THE CROSSES WILL BE PLACED EITHER OVER THE NUMERAL OR OFF THE END OF THE RUNWAY AS DETAILED AND SECURED IN A MANNER APPROVED BY THE MANAGER. THE PROPOSED CROSSES WILL BE PLACED EACH DAY THE RUNWAY IS CLOSED AND REMOVED WHEN THE RUNWAY IS RE-OPENED. THE CONTRACTOR WILL BE RESPONSIBLE FOR THE PLACEMENT AND REMOVAL OF THE CROSSES. NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

PROPOSED AREA 2 STAGING NOTES

AREA 2 STAGE CONSTRUCTION SHALL CONSIST OF ALL WORK ON RUNWAY 9-27 AND RUNWAY 17-35 LOCATED WITHIN 250' OF RUNWAY 9-27 CENTERLINE AND 75' OF RUNWAY 17-35 CENTERLINE.

IN ORDER TO CLOSE RUNWAYS 9-27 AND 17-35 THE CONTRACTOR WILL PLACE CROSSES OVER THE NUMERALS AS DETAILED ON THIS SHEET, AND PLACE BARRICADES ON THE TAXIWAYS AS SHOWN ON THIS SHEET. THE AIRPORT MANAGER WILL ISSUE A NOTICE TO AIRMEN (NOTAM) STATING RUNWAYS 9-27 AND 17-35 ARE CLOSED. WHEN THIS HAS BEEN ACCOMPLISHED THE CONTRACTOR WILL BE ALLOWED TO START WORK WITHIN THE INTERSECTION OF RUNWAYS 9-27 AND 17-35.

THE CONTRACTOR WILL EXPEDITE ALL WORK IN THIS STAGE IN ORDER TO REDUCE THE AMOUNT OF TIME THE AIRPORT IS CLOSED. BOTH RUNWAYS WILL REMAIN CLOSED NO LONGER THAN ONE CONSTRUCTION WEEK. AFTER ONE CONSTRUCTION WEEK THE CONTRACTOR WILL RE-OPEN RUNWAY 9-27 TO 24 HOUR AIRCRAFT OPERATIONS. RUNWAY 17-35 WILL BE RE-OPENED TO "DAYTIME OPERATIONS ONLY".

OPEN TRENCHES OR EXCAVATIONS ARE NOT PERMITTED WITHIN THE RUNWAY SAFETY AREA WHILE THE RESPECTIVE RUNWAY IS OPEN.

THE CONTRACTOR WILL SMOOTH GRADE ALL AREAS WITHIN THE RUNWAY SAFETY AREA TO THE SATISFACTION OF THE RESIDENT ENGINEER PRIOR TO RE-OPENING RUNWAYS 9-27 AND 17-35. IF RUNWAY 17-35 IS RE-OPENED BEFORE EXCAVATIONS ARE BACKFILLED; COVER THE EXCAVATIONS APPROPRIATELY. COVERINGS FOR OPEN TRENCHES OR EXCAVATIONS MUST BE OF SUFFICIENT STRENGTH TO SUPPORT THE HEAVIEST AIRCRAFT OPERATING ON RUNWAY 17-35.

THE CONTRACTOR WILL MOVE ALL EQUIPMENT INTO THE EQUIPMENT PARKING AND MATERIAL STORAGE AREA OR AT LEAST 260 FEET FROM RUNWAY 17-35 CENTERLINE PRIOR TO RE-OPENING RUNWAY 17-35.

THE CONTRACTOR MUST COMPLETE ALL OF THE WORK WITHIN THE STAGE 2 WORK AREA BEFORE HE WILL BE ALLOWED TO MOVE TO THE STAGE 3 WORK AREA.

THE CONTRACTOR AND HIS EMPLOYEES WILL BE RESTRICTED TO THE WORK AREAS AND ALL OTHER AREAS OF THE AIRPORT ARE "OFF LIMITS" TO THEM.

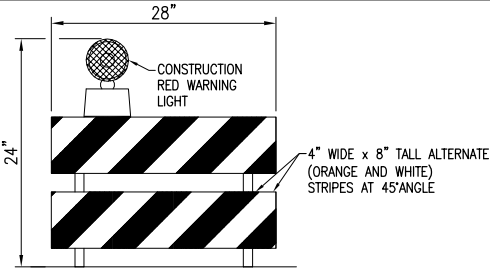
ALL CONSTRUCTION/OPERATIONS ARE TO BE PERFORMED IN ACCORDANCE WITH FAA ADVISORY CIRCULAR (AC) 150/5370-2F "OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION" AND AC 150/5300-13A "AIRPORT DESIGN".

ALL CONSTRUCTION EQUIPMENT ON THE AIRPORT SHALL BE MARKED, LIGHTED AND/OR FLAGGED IN ACCORDANCE WITH AC 150/5210-5 AND 70/7460-1.

ALL WORK INCLUDED IN OPENING AND CLOSING RUNWAYS 9-27 AND 17-35 WILL BE CONSIDERED INCIDENTAL TO THE PROJECT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

LEGEND

- EXISTING IMPROVEMENTS
- PROPOSED STAGE 2 IMPROVEMENTS
- EXISTING BUILDINGS
- PROPOSED HAUL ROUTE AND EQUIPMENT PARKING AREA
- PROPOSED CROSS
- PROPOSED STAGE 2 BARRICADES



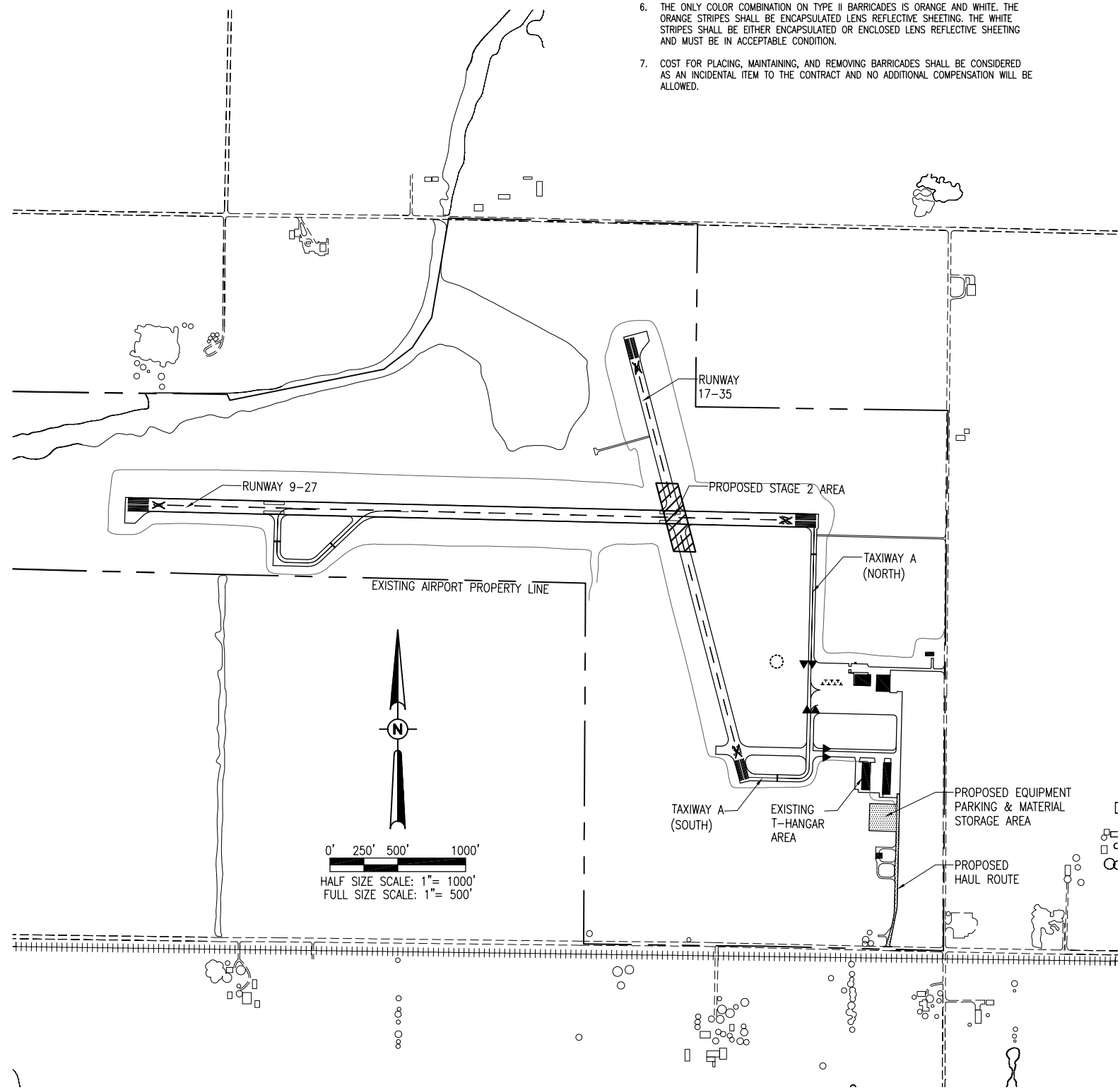
MODIFIED TYPE II BARRICADE
NOT TO SCALE

BARRICADE NOTES

1. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO PLACE AND MAINTAIN BARRICADES AS SHOWN ON THIS SHEET AND AS DIRECTED BY THE AIRPORT MANAGER.
2. MODIFIED TYPE II BARRICADES SHALL BE SPACED END TO END THE WIDTH OF THE PAVEMENT IN 4' INCREMENTS AS DIRECTED BY THE ENGINEER. BARRICADES ARE TO BE SET BACK 100' FROM THE ACTIVE TAXIWAY CENTERLINE OR AS SHOWN ON THE PLANS.
3. CONSTRUCTION RED WARNING LIGHT: THESE ARE PORTABLE, LENS DIRECTED, ENCLOSED LIGHTS. THE COLOR OF THE LIGHT EMITTED SHALL BE RED. THEY MAY BE USED IN EITHER A STEADY BURN (TYPE C) OR LOW INTENSITY FLASHING MODE (TYPE A) UNLESS NOTED OTHERWISE.
4. THE LIGHTING SHALL BE MAINTAINED IN OPERATION DURING THE HOURS OF DARKNESS BETWEEN 1/2 HOUR AFTER SUNSET AND 1/2 HOUR BEFORE SUNRISE AND WHEN CONDITIONS EXIST WHICH TEND TO OBSCURE VISION.
5. BARRICADES SHALL BE SECURED TO THE GROUND BY APPROVED METHODS TO PREVENT MOVEMENT BY PROP WASH, JET BLAST OR OTHER WIND CURRENTS.
6. THE ONLY COLOR COMBINATION ON TYPE II BARRICADES IS ORANGE AND WHITE. THE ORANGE STRIPES SHALL BE ENCAPSULATED LENS REFLECTIVE SHEETING. THE WHITE STRIPES SHALL BE EITHER ENCAPSULATED OR ENCLOSED LENS REFLECTIVE SHEETING AND MUST BE IN ACCEPTABLE CONDITION.
7. COST FOR PLACING, MAINTAINING, AND REMOVING BARRICADES SHALL BE CONSIDERED AS AN INCIDENTAL ITEM TO THE CONTRACT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

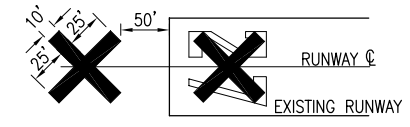
SAFETY NOTES

1. FOLLOWING ARE THE CONSTRUCTION SAFETY PROCEDURES THAT THE CONTRACTOR SHALL FOLLOW THROUGHOUT THIS PROJECT. ADDITIONAL REQUIREMENTS ARE SHOWN ON THE SAFETY AND PHASING NOTES AND DETAILS SHEET.
2. ALL PROVISIONS OF THE LATEST EDITION OF FAA ADVISORY CIRCULAR AC 150/5370-2 (CURRENT EDITION), "OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION", APPLY TO THIS CONTRACT, EXCEPT AS MODIFIED BY THIS SAFETY PLAN, OR AS MODIFIED BY THE OWNER THROUGH THE RESIDENT ENGINEER AT THE PRECONSTRUCTION CONFERENCE, OR DURING THE COURSE OF THE CONTRACT.
3. THE CONTRACTORS SHALL MINIMIZE DISRUPTION OF STANDARD OPERATING PROCEDURES FOR AERONAUTICAL ACTIVITY BY REMAINING WITHIN THE PRESCRIBED STAGING, CONSTRUCTION, AND PHASING AREAS PRESENTED ON THE PROJECT SAFETY AND PHASING PLANS.
4. NO UNAUTHORIZED PERSONNEL SHALL ENTER ANY AREA OF THE AIRPORT THAT COULD POTENTIALLY BE HAZARDOUS. THE ENGINEER, ENGINEER'S REPRESENTATIVE AND/OR AIRPORT MANAGER RESERVE THE RIGHT TO SUSPEND OPERATIONS IN ORDER TO MAINTAIN SAFETY AT THE AIRPORT.
5. CONTRACTOR EQUIPMENT, VEHICLES, AND PROJECT MATERIALS SHALL BE STORED AT THE STAGING AREA SHOWN ON THE PLAN VIEW, EXCEPT AS OTHERWISE PROVIDED FOR AT THE PRECONSTRUCTION CONFERENCE.
6. ALL CONSTRUCTION EQUIPMENT OPERATING IN THE PRESCRIBED CONSTRUCTION AREA IS REQUIRED TO DISPLAY A CHECKERBOARD FLAG PROPERLY LOCATED OR A ROTATING BEACON (STROBE) AS SPECIFIED IN AC 150/5210-5, "PAINTING, MARKING, AND LIGHTING OF VEHICLES USED ON AN AIRPORT" LATEST EDITION.
7. NO CONSTRUCTION MATERIAL STOCKPILES SHALL BE LOCATED WITHIN 250' (RUNWAY 17-35) OR 400' (RUNWAY 9-27) OF ANY ACTIVE RUNWAY, WITHIN 66' OF ANY OTHER ACTIVE AIRPORT OPERATIONS AREA, OR PENETRATE A PART 77 IMAGINARY SURFACE (PROVIDED BY THE ENGINEER) EXTENDING OUT AND UPWARDS FROM ALL SIDES OF AN ACTIVE RUNWAY.
8. CLOSED AIRFIELD PHASING AREAS, OPEN TRENCHES, AND STOCKPILED MATERIALS AT THE CONSTRUCTION SITE SHALL BE PROMINENTLY MARKED WITH LIGHTED BARRICADES WITH STEADY BURNING OR FLASHING RED LIGHTS AS SPECIFIED IN 150/5370-2, "OPERATIONAL SAFETY ON AIRPORT DURING CONSTRUCTION, LATEST EDITION. LIGHTED BARRICADES MUST BE NO TALLER THAN 18" (EXCLUSIVE OF SUPPLEMENTARY LIGHTS AND FLAGS) ON THE TAXIWAYS AND COMPLY WITH ADVISORY CIRCULAR 150/5370-2, LATEST EDITION. CONTRACTOR SHALL NIGHT CHECK BARRICADES DAILY FOR PROPER OPERATION.
9. NO OPEN TRENCHES WITHIN 250' (RUNWAY 17-35) OR 400' (RUNWAY 9-27) OF AN ACTIVE RUNWAY CENTERLINE OR WITHIN 66' OF ANY AIRPORT OPERATIONS AREA WILL BE PERMITTED UNLESS PROPERLY MARKED. OTHER TRENCHES SHALL BE MAINTAINED SAFE, I.E., BARRICADED OR COVERED WITH STEEL PLATES IN ALL OTHER AREAS.
10. OPEN TRENCHES, EXCAVATIONS, AND STOCKPILED MATERIALS AT THE CONSTRUCTION SITE SHOULD BE PROMINENTLY MARKED WITH ORANGE FLAGS AND LIGHTED WITH FLASHING YELLOW LIGHTS DURING HOURS OF RESTRICTED VISIBILITY AND/OR DARKNESS.
11. NO OPEN FLAME WELDING OR TORCH CUTTING OPERATION IS PERMITTED UNLESS ADEQUATE FIRE AND SAFETY PRECAUTIONS ARE PROVIDED AND HAVE BEEN APPROVED BY THE AIRPORT MANAGER. NO FLARE POTS ARE ALLOWED ON THE PROJECT.
12. SOIL, DEBRIS, AND LOOSE MATERIAL DROPPED OR TRUCKED ONTO AIRPORT ROADS, TAXIWAYS, AND SOD SURFACES, OR WHICH CAN BE BLOWN ONTO SUCH SURFACES, SHALL BE IMMEDIATELY SWEEP, PICKED UP AND REMOVED, OR PLACED INTO CLOSED CONTAINERS. ANY DAMAGE TO AIRPORT PROPERTY SHALL BE REPAIRED IMMEDIATELY AT NO COST TO THE OWNER.
13. EACH CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND MAINTAINING AIRPORT LIGHTING AND NAVIGATIONAL ELECTRICAL SYSTEMS DURING CONSTRUCTION. A CONTACT PERSON AND TELEPHONE NUMBER FOR 24 HOUR EMERGENCY IMMEDIATE REPAIR SHALL BE SUBMITTED TO THE AIRPORT MANAGER AND ENGINEER. HAUL ROUTES CROSSING PAVEMENT, DRAINAGE, MISCELLANEOUS STRUCTURES AND/OR AIRFIELD CABLES SHALL BE PROTECTED FROM DAMAGE.
14. ALL AIRCRAFT AND AIRPORT OPERATIONS HAVE THE RIGHT-OF-WAY. CONTRACTOR TO YIELD TO VEHICLES AND REMAIN CLEAR AT ALL TIMES.
15. CONTRACTOR SHALL PLACE, SECURE, AND MAINTAIN LIGHTED BARRICADES AND CLOSURE CROSSES WHEN A RUNWAY/TAXIWAY/APRON IS CLOSED OR AS REQUIRED BY THE PLANS AND DESIGNATED BY THE ENGINEER.
16. CONTRACTOR SHALL MARK HAZARDOUS AREA WITH STEADY-BURNING OR FLASHING RED AND YELLOW LIGHTS DURING PERIODS OF LOW VISIBILITY AS REQUIRED.
17. THE CONTRACTOR SHALL PERIODICALLY PERFORM ONSITE INSPECTIONS THROUGHOUT THE DURATION OF THE PROJECT WITH THE IMMEDIATE REMEDY OF ANY DIFFERENCES, WHETHER CAUSED BY NEGLIGENCE, OVERSIGHT, OR PROJECT SCOPE CHANGE.
18. CONTRACTOR SHALL MOVE MAINTENANCE OF TRAFFIC COMPONENTS AT THE WRITTEN DIRECTION OF THE ENGINEER AT NO ADDITIONAL COST.
19. CONTRACTOR SHALL NOT REMOVE THE BARRICADES WITHOUT THE APPROVAL BY THE ENGINEER.
20. CONTRACTOR SHALL MAINTAIN FLASHERS, SIGNS AND/OR BARRICADES AS REQUIRED BY THE PLANS, CITY OR COUNTY REGULATIONS OR CONTRACTOR ACTIVITIES. CONTRACTOR SHALL OBTAIN ANY AND ALL REQUIRED LOCAL PERMITS UNLESS SPECIFIED OTHERWISE.
21. THE CONTRACTOR SHALL UTILIZE WATER AND/OR CHEMICALS APPROVED BY THE ENGINEER AS NECESSARY TO CONTROL DUST.
22. UNLESS SPECIFIED OTHERWISE, COST FOR THE ABOVE IS TO BE CONSIDERED INCIDENTAL TO THE PROJECT. SEPARATE PAYMENT SHALL NOT BE MADE.



APR 03, 2014, 11:55 AM HAGC000382
p:\sps-svr206\hanson.dom\hanson_projects\Documents\13\jobs\13A0058\13A0058D\CAD\Work\Sheet\G-004-STG

REVISION		CRAWFORD COUNTY AIRPORT ROBINSON CRAWFORD COUNTY, ILLINOIS	S.B.C. PROJ.: 3-17-SBGP-XX IL PROJ.: RSY-4334
DATE			
LAYOUT	KIL	09/09/13	 © Copyright Hanson Professional Services Inc. 2014 Hanson Professional Services Inc. 1525 South Sixth Street Springfield, Illinois 62703-2986 Ph: (217) 788-2450 Fax: (217) 788-2503 www.hanson-inc.com Offices Nationwide
DRAWN	BAK	09/09/13	
REVIEWED	CAH/BSS	03/07/14	
DATE	SCALE	DATE	
Hanson Proj. No. 13A0058 Filename: G-004-STG.dwg Scale: 1" = 500' Date: 03/07/14			
REPLACE MIREL AND MITL SYSTEMS	PROPOSED AREA 2 STAGING PLAN		
5			
5 of 48 sheets			



YELLOW IN COLOR
DETAIL OF CROSS FOR CLOSED RUNWAY
"NOT TO SCALE"

NOTE:
COST OF CONSTRUCTING, PLACING, MAINTAINING AND REMOVING CROSSES WILL BE CONSIDERED INCIDENTAL TO THE CONTRACT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED. THE CROSSES WILL BE YELLOW IN COLOR AND SHALL BE MADE OF A SUITABLE MATERIAL AS APPROVED BY THE AIRPORT MANAGER. THE CROSSES WILL BE PLACED EITHER ON THE NUMERAL OR OFF THE END OF THE RUNWAY AS DETAILED AND SECURED IN A MANNER APPROVED BY THE MANAGER. THE PROPOSED CROSSES WILL BE PLACED EACH DAY THE RUNWAY IS CLOSED AND REMOVED WHEN THE RUNWAY IS RE-OPENED. THE CONTRACTOR WILL BE RESPONSIBLE FOR THE PLACEMENT AND REMOVAL OF THE CROSSES. NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

PROPOSED AREA 3 STAGING NOTES

AREA 3 STAGE CONSTRUCTION SHALL CONSIST OF ALL WORK ON RUNWAY 17-35 THAT IS LOCATED OUTSIDE OF THE RUNWAY 9-27 SAFETY AREA (250' FROM ITS CENTERLINE). ALSO INCLUDED IN THIS STAGE WILL BE ALL WORK ON TAXIWAY A (SOUTH).

IN ORDER TO CLOSE RUNWAY 17-35 THE CONTRACTOR WILL PLACE CROSSES OVER THE NUMERALS AS DETAILED ON THIS SHEET, AND PLACE BARRICADES AS SHOWN ON THIS SHEET. THE AIRPORT MANAGER WILL ISSUE A NOTICE TO ARMEN (NOTAM) STATING RUNWAY 17-35 IS CLOSED. WHEN THIS HAS BEEN ACCOMPLISHED THE CONTRACTOR WILL BE ALLOWED TO START WORK ON RUNWAY 17-35 AND TAXIWAY A (SOUTH).

THE CONTRACTOR WILL BE ALLOWED TO CLOSE RUNWAY 17-35 AND TAXIWAY A (SOUTH) FOR THE CONSTRUCTION WEEK. AT THE END OF THE CONSTRUCTION WEEK HE MUST RE-OPEN RUNWAY 17-35 AND TAXIWAY A (SOUTH) FOR "DAYTIME OPERATIONS ONLY".

OPEN TRENCHES OR EXCAVATIONS ARE NOT PERMITTED WITHIN THE RUNWAY SAFETY AREA OR TAXIWAY OBJECT FREE AREA WHILE THE RESPECTIVE RUNWAY OR TAXIWAY IS OPEN.

THE CONTRACTOR WILL SMOOTH GRADE ALL AREAS WITHIN THE RUNWAY SAFETY AREA AND THE TAXIWAY OBJECT FREE AREA TO THE SATISFACTION OF THE RESIDENT ENGINEER PRIOR TO RE-OPENING RUNWAY 17-35 AND TAXIWAY A (SOUTH). IF THE RUNWAY AND/OR TAXIWAY A (SOUTH) IS RE-OPENED BEFORE EXCAVATIONS ARE BACKFILLED; COVER THE EXCAVATIONS APPROPRIATELY. COVERINGS FOR OPEN TRENCHES OR EXCAVATIONS MUST BE OF SUFFICIENT STRENGTH TO SUPPORT THE HEAVIEST AIRCRAFT OPERATING ON RUNWAY 17-35.

THE CONTRACTOR WILL MOVE ALL EQUIPMENT INTO THE EQUIPMENT PARKING AND MATERIAL STORAGE AREA OR AT LEAST 260 FEET FROM RUNWAY 17-35 CENTERLINE OR 70' FROM TAXIWAY A (SOUTH) CENTERLINE PRIOR TO RE-OPENING RUNWAY 17-35 AND/OR TAXIWAY A (SOUTH).

THE CONTRACTOR MUST COMPLETE ALL OF THE WORK WITHIN THE STAGE 3 WORK AREA BEFORE HE WILL BE ALLOWED TO MOVE TO THE STAGE 4 WORK AREA.

THE CONTRACTOR AND HIS EMPLOYEES WILL BE RESTRICTED TO THE WORK AREAS AND ALL OTHER AREAS OF THE AIRPORT ARE "OFF LIMITS" TO THEM.

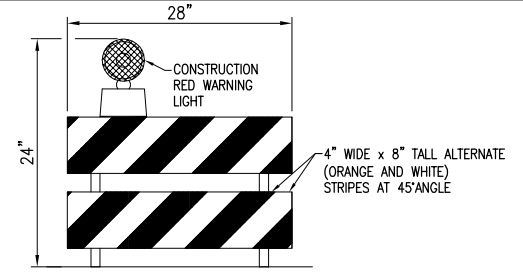
ALL CONSTRUCTION/OPERATIONS ARE TO BE PERFORMED IN ACCORDANCE WITH FAA ADVISORY CIRCULAR (AC) 150/5370-2F "OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION" AND AC 150/5300-13A "AIRPORT DESIGN".

ALL CONSTRUCTION EQUIPMENT ON THE AIRPORT SHALL BE MARKED, LIGHTED AND/OR FLAGGED IN ACCORDANCE WITH AC 150/5210-5 AND 70/7460-1.

ALL WORK INCLUDED IN OPENING AND CLOSING RUNWAY 17-35 AND TAXIWAY A (SOUTH) WILL BE CONSIDERED INCIDENTAL TO THE PROJECT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

LEGEND

- EXISTING IMPROVEMENTS
- PROPOSED STAGE 3 IMPROVEMENTS
- EXISTING BUILDINGS
- PROPOSED HAUL ROUTE AND EQUIPMENT PARKING AREA
- PROPOSED CROSS
- PROPOSED STAGE 3 BARRICADES



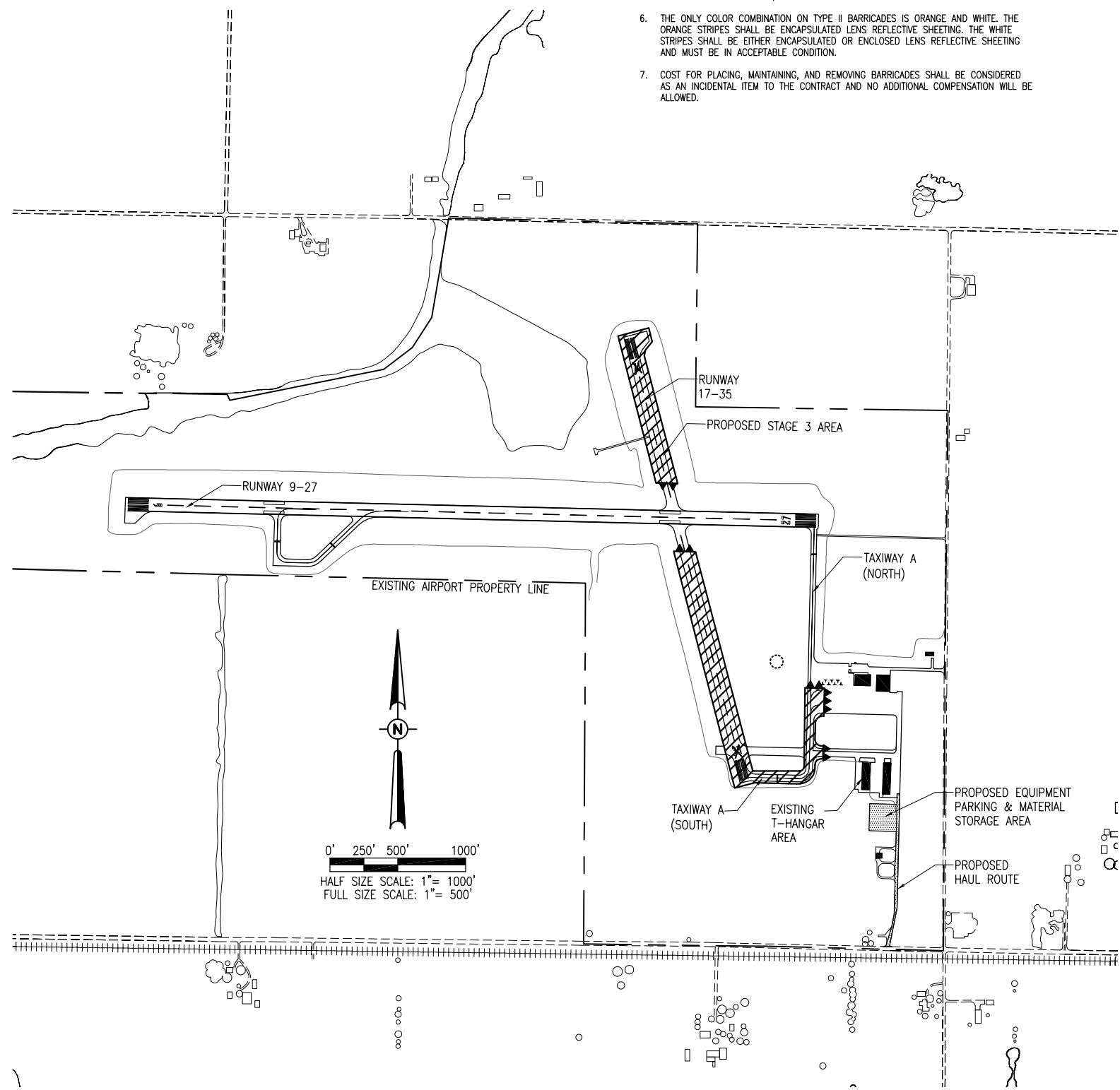
MODIFIED TYPE II BARRICADE
NOT TO SCALE

BARRICADE NOTES

1. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO PLACE AND MAINTAIN BARRICADES AS SHOWN ON THIS SHEET AND AS DIRECTED BY THE AIRPORT MANAGER.
2. MODIFIED TYPE II BARRICADES SHALL BE SPACED END TO END THE WIDTH OF THE PAVEMENT IN 4' INCREMENTS AS DIRECTED BY THE ENGINEER. BARRICADES ARE TO BE SET BACK 100' FROM THE ACTIVE TAXIWAY CENTERLINE, 250' FROM THE ACTIVE RUNWAY CENTERLINE OR AS SHOWN ON THE PLANS.
3. CONSTRUCTION RED WARNING LIGHT: THESE ARE PORTABLE, LENS DIRECTED, ENCLOSED LIGHTS. THE COLOR OF THE LIGHT EMITTED SHALL BE RED. THEY MAY BE USED IN EITHER A STEADY BURN (TYPE C) OR LOW INTENSITY FLASHING MODE (TYPE A) UNLESS NOTED OTHERWISE.
4. THE LIGHTING SHALL BE MAINTAINED IN OPERATION DURING THE HOURS OF DARKNESS BETWEEN 1/2 HOUR AFTER SUNSET AND 1/2 HOUR BEFORE SUNRISE AND WHEN CONDITIONS EXIST WHICH TEND TO OBSCURE VISION.
5. BARRICADES SHALL BE SECURED TO THE GROUND BY APPROVED METHODS TO PREVENT MOVEMENT BY PROP WASH, JET BLAST OR OTHER WIND CURRENTS.
6. THE ONLY COLOR COMBINATION ON TYPE II BARRICADES IS ORANGE AND WHITE. THE ORANGE STRIPES SHALL BE ENCAPSULATED LENS REFLECTIVE SHEETING. THE WHITE STRIPES SHALL BE EITHER ENCAPSULATED OR ENCLOSED LENS REFLECTIVE SHEETING AND MUST BE IN ACCEPTABLE CONDITION.
7. COST FOR PLACING, MAINTAINING, AND REMOVING BARRICADES SHALL BE CONSIDERED AS AN INCIDENTAL ITEM TO THE CONTRACT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

SAFETY NOTES

1. FOLLOWING ARE THE CONSTRUCTION SAFETY PROCEDURES THAT THE CONTRACTOR SHALL FOLLOW THROUGHOUT THIS PROJECT. ADDITIONAL REQUIREMENTS ARE SHOWN ON THE SAFETY AND PHASING NOTES AND DETAILS SHEET.
2. ALL PROVISIONS OF THE LATEST EDITION OF FAA ADVISORY CIRCULAR AC 150/5370-2 (CURRENT EDITION), "OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION", APPLY TO THIS CONTRACT, EXCEPT AS MODIFIED BY THIS SAFETY PLAN, OR AS MODIFIED BY THE OWNER THROUGH THE RESIDENT ENGINEER AT THE PRECONSTRUCTION CONFERENCE, OR DURING THE COURSE OF THE CONTRACT.
3. THE CONTRACTORS SHALL MINIMIZE DISRUPTION OF STANDARD OPERATING PROCEDURES FOR AERONAUTICAL ACTIVITY BY REMAINING WITHIN THE PRESCRIBED STAGING, CONSTRUCTION, AND PHASING AREAS PRESENTED ON THE PROJECT SAFETY AND PHASING PLANS.
4. NO UNAUTHORIZED PERSONNEL SHALL ENTER ANY AREA OF THE AIRPORT THAT COULD POTENTIALLY BE HAZARDOUS. THE ENGINEER, ENGINEER'S REPRESENTATIVE AND/OR AIRPORT MANAGER RESERVE THE RIGHT TO SUSPEND OPERATIONS IN ORDER TO MAINTAIN SAFETY AT THE AIRPORT.
5. CONTRACTOR EQUIPMENT, VEHICLES, AND PROJECT MATERIALS SHALL BE STORED AT THE STAGING AREA SHOWN ON THE PLAN VIEW, EXCEPT AS OTHERWISE PROVIDED FOR AT THE PRECONSTRUCTION CONFERENCE.
6. ALL CONSTRUCTION EQUIPMENT OPERATING IN THE PRESCRIBED CONSTRUCTION AREA IS REQUIRED TO DISPLAY A CHECKERBOARD FLAG (OTHER THAN A ROTATING BEACON (STROBE) AS SPECIFIED IN AC 150/5210-5, "PAINTING, MARKING, AND LIGHTING OF VEHICLES USED ON AN AIRPORT" LATEST EDITION.
7. NO CONSTRUCTION MATERIAL STOCKPILES SHALL BE LOCATED WITHIN 250' (RUNWAY 17-35) OR 400' (RUNWAY 9-27) OF ANY ACTIVE RUNWAY, WITHIN 66' OF ANY OTHER ACTIVE AIRPORT OPERATIONS AREA, OR PENETRATE A PART 77 IMAGINARY SURFACE (PROVIDED BY THE ENGINEER) EXTENDING OUT AND UPWARDS FROM ALL SIDES OF AN ACTIVE RUNWAY.
8. CLOSED AIRFIELD PHASING AREAS, OPEN TRENCHES, AND STOCKPILED MATERIALS AT THE CONSTRUCTION SITE SHALL BE PROMINENTLY MARKED WITH LIGHTED BARRICADES WITH STEADY BURNING OR FLASHING RED LIGHTS AS SPECIFIED IN 150/5370-2, "OPERATIONAL SAFETY ON AIRPORT DURING CONSTRUCTION, LATEST EDITION. LIGHTED BARRICADES MUST BE NO TALLER THAN 18" (EXCLUSIVE OF SUPPLEMENTARY LIGHTS AND FLAGS) ON THE TAXIWAYS AND COMPLY WITH ADVISORY CIRCULAR 150/5370-2, LATEST EDITION. CONTRACTOR SHALL NIGHT CHECK BARRICADES DAILY FOR PROPER OPERATION.
9. NO OPEN TRENCHES WITHIN 250' (RUNWAY 17-35) OR 400' (RUNWAY 9-27) OF AN ACTIVE RUNWAY CENTERLINE OR WITHIN 66' OF ANY AIRPORT OPERATIONS AREA WILL BE PERMITTED UNLESS PROPERLY MARKED. OTHER TRENCHES SHALL BE MAINTAINED SAFE, I.E., BARRICADED OR COVERED WITH STEEL PLATES IN ALL OTHER AREAS.
10. OPEN TRENCHES, EXCAVATIONS, AND STOCKPILED MATERIALS AT THE CONSTRUCTION SITE SHOULD BE PROMINENTLY MARKED WITH ORANGE FLAGS AND LIGHTED WITH FLASHING YELLOW LIGHTS DURING HOURS OF RESTRICTED VISIBILITY AND/OR DARKNESS.
11. NO OPEN FLAME WELDING OR TORCH CUTTING OPERATION IS PERMITTED UNLESS ADEQUATE FIRE AND SAFETY PRECAUTIONS ARE PROVIDED AND HAVE BEEN APPROVED BY THE AIRPORT MANAGER. NO FLARE POTS ARE ALLOWED ON THE PROJECT.
12. SOIL, DEBRIS, AND LOOSE MATERIAL DROPPED OR TRUCKED ONTO AIRPORT ROADS, TAXIWAYS, AND SOD SURFACES, OR WHICH CAN BE BLOWN ONTO SUCH SURFACES, SHALL BE IMMEDIATELY SWEEP, PICKED UP AND REMOVED, OR PLACED INTO CLOSED CONTAINERS. ANY DAMAGE TO AIRPORT PROPERTY SHALL BE REPAIRED IMMEDIATELY AT NO COST TO THE OWNER.
13. EACH CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND MAINTAINING AIRPORT LIGHTING AND NAVIGATIONAL ELECTRICAL SYSTEMS DURING CONSTRUCTION. A CONTACT PERSON AND TELEPHONE NUMBER FOR 24 HOUR EMERGENCY IMMEDIATE REPAIR SHALL BE SUBMITTED TO THE AIRPORT MANAGER AND ENGINEER. HAUL ROUTES CROSSING PAVEMENT, DRAINAGE, MISCELLANEOUS STRUCTURES AND/OR AIRFIELD CABLES SHALL BE PROTECTED FROM DAMAGE.
14. ALL AIRCRAFT AND AIRPORT OPERATIONS HAVE THE RIGHT-OF-WAY. CONTRACTOR TO YIELD TO VEHICLES AND REMAIN CLEAR AT ALL TIMES.
15. CONTRACTOR SHALL PLACE, SECURE, AND MAINTAIN LIGHTED BARRICADES AND CLOSURE CROSSES WHEN A RUNWAY/TAXIWAY/APRON IS CLOSED OR AS REQUIRED BY THE PLANS AND DESIGNATED BY THE ENGINEER.
16. CONTRACTOR SHALL MARK HAZARDOUS AREA WITH STEADY-BURNING OR FLASHING RED AND YELLOW LIGHTS DURING PERIODS OF LOW VISIBILITY AS REQUIRED.
17. THE CONTRACTOR SHALL PERIODICALLY PERFORM ONSITE INSPECTIONS THROUGHOUT THE DURATION OF THE PROJECT WITH THE IMMEDIATE REMEDY OF ANY DIFFERENCES, WHETHER CAUSED BY NEGLIGENCE, OVERSIGHT, OR PROJECT SCOPE CHANGE.
18. CONTRACTOR SHALL MOVE MAINTENANCE OF TRAFFIC COMPONENTS AT THE WRITTEN DIRECTION OF THE ENGINEER AT NO ADDITIONAL COST.
19. CONTRACTOR SHALL NOT REMOVE THE BARRICADES WITHOUT THE APPROVAL BY THE ENGINEER.
20. CONTRACTOR SHALL MAINTAIN FLASHERS, SIGNS AND/OR BARRICADES AS REQUIRED BY THE PLANS, CITY OR COUNTY REGULATIONS OR CONTRACTOR ACTIVITIES. CONTRACTOR SHALL OBTAIN ANY AND ALL REQUIRED LOCAL PERMITS UNLESS SPECIFIED OTHERWISE.
21. THE CONTRACTOR SHALL UTILIZE WATER AND/OR CHEMICALS APPROVED BY THE ENGINEER AS NECESSARY TO CONTROL DUST.
22. UNLESS SPECIFIED OTHERWISE, COST FOR THE ABOVE IS TO BE CONSIDERED INCIDENTAL TO THE PROJECT. SEPARATE PAYMENT SHALL NOT BE MADE.



APR 03, 2014 11:54 AM HAGC000382
p:\sps-svr206\hanson.dom\hanson_projects\Documents\13\jobs\13A0058\13A0058D\CAD\Airport\Sheet\G-004-SIG

REVISION	
DATE	

CRAWFORD COUNTY AIRPORT
ROBINSON
CRAWFORD COUNTY, ILLINOIS
S.B.C. PROJ.: 3-17-SBGP-XX
IL PROJ.: RSY-4334

Hanson Proj. No. 13A0058	09/09/13
Filename G-004-SIG.dwg	KNL
Scale 1" = 500'	BAK
Date 03/07/14	09/09/13
LAYOUT	REVIEWED
DRAWN	CAH/BSS
03/07/14	

HANSON
Professional Services Inc. 2014
1525 South Sixth Street
Springfield, Illinois 62703-2886
Ph: (217) 788-2450 Fax: (217) 788-2903
www.hanson-inc.com
Offices Nationwide

REPLACE MRL AND
MITL SYSTEMS
PROPOSED AREA 3
STAGING PLAN

PROPOSED AREA 4 STAGING NOTES

AREA 4 STAGE CONSTRUCTION SHALL CONSIST OF ALL WORK ON THE T-HANGAR ACCESS TAXIWAYS AND THE SOUTH EDGE OF THE AIRCRAFT PARKING APRON. BOTH RUNWAY 9-27 AND 17-35 WILL BE OPEN TO 24 HOUR AIRCRAFT OPERATIONS AS WELL AS BOTH TAXIWAY A (NORTH) AND TAXIWAY A (SOUTH).

IN ORDER TO CLOSE THE T-HANGAR ACCESS TAXIWAYS AND THE SOUTH EDGE OF THE AIRCRAFT PARKING APRON THE CONTRACTOR WILL PLACE BARRICADES AS SHOWN ON THIS SHEET. THE AIRPORT MANAGER WILL ISSUE A NOTICE TO AIRMEN (NOTAM) STATING THE T-HANGAR ACCESS TAXIWAYS AND THE SOUTH EDGE OF THE AIRCRAFT PARKING APRON ARE CLOSED TO AIRCRAFT OPERATIONS. AT THE SAME TIME ANY AIRCRAFT OWNER THAT HAS AN AIRCRAFT LOCATED IN THE T-HANGARS WILL MOVE THE AIRCRAFT TO THE AIRCRAFT PARKING APRON (IF HE WANTS TO FLY THE AIRCRAFT WHILE THE T-HANGAR ACCESS TAXIWAYS ARE CLOSED). WHEN THIS HAS BEEN ACCOMPLISHED THE CONTRACTOR WILL BE ALLOWED TO START WORK ON THE T-HANGAR ACCESS TAXIWAYS AND THE SOUTH EDGE OF THE AIRCRAFT PARKING APRON.

THE PROPOSED BARRICADES ALONG THE SOUTH EDGE OF THE AIRCRAFT PARKING APRON WILL BE PLACED 20' FROM THE PAVEMENT EDGE.

THE CONTRACTOR WILL BE ALLOWED TO CLOSE THE T-HANGAR ACCESS TAXIWAYS AND THE SOUTH EDGE OF THE AIRCRAFT PARKING APRON FOR THE CONSTRUCTION WEEK. AT THE END OF THE CONSTRUCTION WEEK HE MUST RE-OPEN THESE AREAS FOR "DAYTIME OPERATIONS ONLY".

OPEN TRENCHES OR EXCAVATIONS ARE NOT PERMITTED WITHIN THE TAXIWAY OBJECT FREE AREA WHILE THE RESPECTIVE TAXIWAY IS OPEN.

THE CONTRACTOR WILL SMOOTH GRADE ALL AREAS WITHIN THE TAXIWAY OBJECT FREE AREA TO THE SATISFACTION OF THE RESIDENT ENGINEER PRIOR TO RE-OPENING TAXIWAY. IF THE TAXIWAY RE-OPENED BEFORE EXCAVATIONS ARE BACKFILLED; COVER THE EXCAVATIONS APPROPRIATELY. COVERINGS FOR OPEN TRENCHES OR EXCAVATIONS MUST BE OF SUFFICIENT STRENGTH TO SUPPORT THE HEAVIEST AIRCRAFT OPERATING ON TAXIWAY.

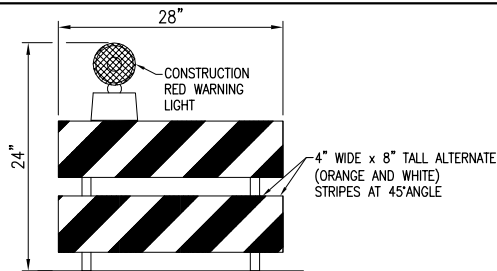
THE CONTRACTOR WILL MOVE ALL EQUIPMENT INTO THE EQUIPMENT PARKING AND MATERIAL STORAGE AREA OR AT LEAST 70' FROM TAXIWAY CENTERLINE PRIOR TO RE-OPENING THE TAXIWAY.

THE CONTRACTOR AND HIS EMPLOYEES WILL BE RESTRICTED TO THE WORK AREAS AND ALL OTHER AREAS OF THE AIRPORT ARE "OFF LIMITS" TO THEM.

ALL CONSTRUCTION/OPERATIONS ARE TO BE PERFORMED IN ACCORDANCE WITH FAA ADVISORY CIRCULAR (AC) 150/5370-2F "OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION" AND AC 150/5300-13A "AIRPORT DESIGN".

ALL CONSTRUCTION EQUIPMENT ON THE AIRPORT SHALL BE MARKED, LIGHTED AND/OR FLAGGED IN ACCORDANCE WITH AC 150/5210-5 AND 70/7460-1.

ALL WORK INCLUDED IN OPENING AND CLOSING THE T-HANGAR ACCESS TAXIWAY AND THE SOUTH EDGE OF THE AIRCRAFT PARKING APRON WILL BE CONSIDERED INCIDENTAL TO THE PROJECT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.



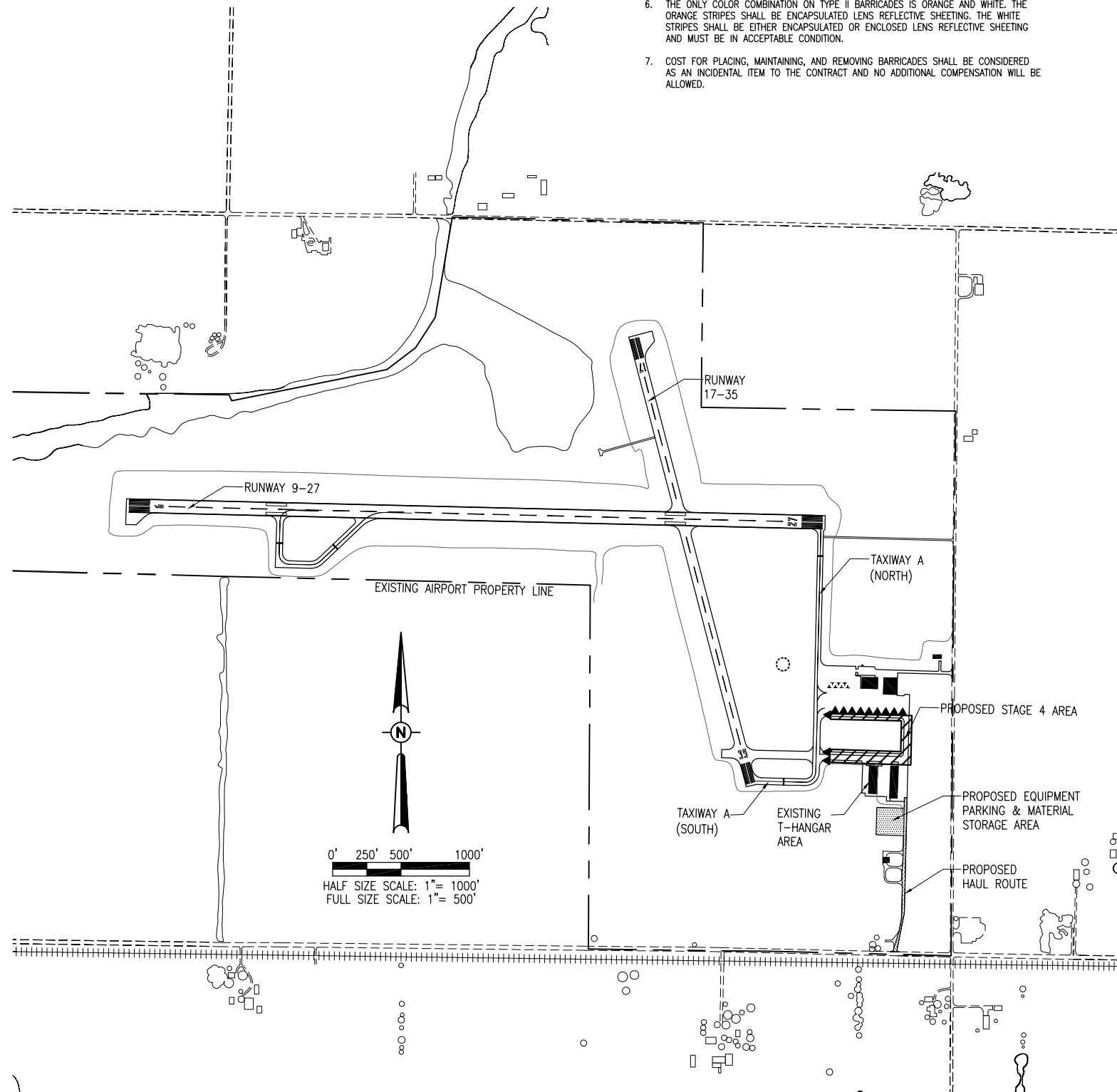
MODIFIED TYPE II BARRICADE
NOT TO SCALE

BARRICADE NOTES

- IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO PLACE AND MAINTAIN BARRICADES AS SHOWN ON THIS SHEET AND AS DIRECTED BY THE AIRPORT MANAGER.
- MODIFIED TYPE II BARRICADES SHALL BE SPACED END TO END THE WIDTH OF THE PAVEMENT IN 4' INCREMENTS AS DIRECTED BY THE ENGINEER. BARRICADES ARE TO BE SET BACK 100' FROM THE ACTIVE TAXIWAY CENTERLINE OR AS SHOWN ON THE PLANS.
- CONSTRUCTION RED WARNING LIGHT: THESE ARE PORTABLE, LENS DIRECTED, ENCLOSED LIGHTS. THE COLOR OF THE LIGHT EMITTED SHALL BE RED. THEY MAY BE USED IN EITHER A STEADY BURN (TYPE C) OR LOW INTENSITY FLASHING MODE (TYPE A) UNLESS NOTED OTHERWISE.
- THE LIGHTING SHALL BE MAINTAINED IN OPERATION DURING THE HOURS OF DARKNESS BETWEEN 1/2 HOUR AFTER SUNSET AND 1/2 HOUR BEFORE SUNRISE AND WHEN CONDITIONS EXIST WHICH TEND TO OBSCURE VISION.
- BARRICADES SHALL BE SECURED TO THE GROUND BY APPROVED METHODS TO PREVENT MOVEMENT BY PROP WASH, JET BLAST OR OTHER WIND CURRENTS.
- THE ONLY COLOR COMBINATION ON TYPE II BARRICADES IS ORANGE AND WHITE. THE ORANGE STRIPES SHALL BE ENCAPSULATED LENS REFLECTIVE SHEETING. THE WHITE STRIPES SHALL BE EITHER ENCAPSULATED OR ENCLOSED LENS REFLECTIVE SHEETING AND MUST BE IN ACCEPTABLE CONDITION.
- COST FOR PLACING, MAINTAINING, AND REMOVING BARRICADES SHALL BE CONSIDERED AS AN INCIDENTAL ITEM TO THE CONTRACT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

SAFETY NOTES

- FOLLOWING ARE THE CONSTRUCTION SAFETY PROCEDURES THAT THE CONTRACTOR SHALL FOLLOW THROUGHOUT THIS PROJECT. ADDITIONAL REQUIREMENTS ARE SHOWN ON THE SAFETY AND PHASING NOTES AND DETAILS SHEET.
- ALL PROVISIONS OF THE LATEST EDITION OF FAA ADVISORY CIRCULAR AC 150/5370-2 (CURRENT EDITION), "OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION", APPLY TO THIS CONTRACT, EXCEPT AS MODIFIED BY THIS SAFETY PLAN, OR AS MODIFIED BY THE OWNER THROUGH THE RESIDENT ENGINEER AT THE PRECONSTRUCTION CONFERENCE, OR DURING THE COURSE OF THE CONTRACT.
- THE CONTRACTORS SHALL MINIMIZE DISRUPTION OF STANDARD OPERATING PROCEDURES FOR AERONAUTICAL ACTIVITY BY REMAINING WITHIN THE PRESCRIBED STAGING, CONSTRUCTION, AND PHASING AREAS PRESENTED ON THE PROJECT SAFETY AND PHASING PLANS.
- NO UNAUTHORIZED PERSONNEL SHALL ENTER ANY AREA OF THE AIRPORT THAT COULD POTENTIALLY BE HAZARDOUS. THE ENGINEER, ENGINEER'S REPRESENTATIVE AND/OR AIRPORT MANAGER RESERVE THE RIGHT TO SUSPEND OPERATIONS IN ORDER TO MAINTAIN SAFETY AT THE AIRPORT.
- CONTRACTOR EQUIPMENT, VEHICLES, AND PROJECT MATERIALS SHALL BE STORED AT THE STAGING AREA SHOWN ON THE PLAN VIEW, EXCEPT AS OTHERWISE PROVIDED FOR AT THE PRECONSTRUCTION CONFERENCE.
- ALL CONSTRUCTION EQUIPMENT OPERATING IN THE PRESCRIBED CONSTRUCTION AREA IS REQUIRED TO DISPLAY A CHECKERBOARD FLAG PROPERLY LOCATED OR A ROTATING BEACON (STROBE) AS SPECIFIED IN AC 150/5210-5, "PAINTING, MARKING, AND LIGHTING OF VEHICLES USED ON AN AIRPORT" LATEST EDITION.
- NO CONSTRUCTION MATERIAL STOCKPILES SHALL BE LOCATED WITHIN 250' (RUNWAY 17-35) OR 400' (RUNWAY 9-27) OF ANY ACTIVE RUNWAY, WITHIN 66' OF ANY OTHER ACTIVE AIRPORT OPERATIONS AREA, OR PENETRATE A PART 77 IMAGINARY SURFACE (PROVIDED BY THE ENGINEER) EXTENDING OUT AND UPWARDS FROM ALL SIDES OF AN ACTIVE RUNWAY.
- CLOSED AIRFIELD PHASING AREAS, OPEN TRENCHES, AND STOCKPILED MATERIALS AT THE CONSTRUCTION SITE SHALL BE PROMINENTLY MARKED WITH LIGHTED BARRICADES WITH STEADY BURNING OR FLASHING RED LIGHTS AS SPECIFIED IN 150/5370-2, "OPERATIONAL SAFETY ON AIRPORT DURING CONSTRUCTION, LATEST EDITION. LIGHTED BARRICADES MUST BE NO TALLER THAN 18" (EXCLUSIVE OF SUPPLEMENTARY LIGHTS AND FLAGS) ON THE TAXIWAYS AND COMPLY WITH ADVISORY CIRCULAR 150/5370-2, LATEST EDITION. CONTRACTOR SHALL NIGHT CHECK BARRICADES DAILY FOR PROPER OPERATION.
- NO OPEN TRENCHES WITHIN 250' (RUNWAY 17-35) OR 400' (RUNWAY 9-27) OF AN ACTIVE RUNWAY CENTERLINE OR WITHIN 66' OF ANY AIRPORT OPERATIONS AREA WILL BE PERMITTED UNLESS PROPERLY MARKED. OTHER TRENCHES SHALL BE MAINTAINED SAFE, I.E., BARRICADED OR COVERED WITH STEEL PLATES IN ALL OTHER AREAS.
- OPEN TRENCHES, EXCAVATIONS, AND STOCKPILED MATERIALS AT THE CONSTRUCTION SITE SHOULD BE PROMINENTLY MARKED WITH ORANGE FLAGS AND LIGHTED WITH FLASHING YELLOW LIGHTS DURING HOURS OF RESTRICTED VISIBILITY AND/OR DARKNESS.
- NO OPEN FLAME WELDING OR TORCH CUTTING OPERATION IS PERMITTED UNLESS ADEQUATE FIRE AND SAFETY PRECAUTIONS ARE PROVIDED AND HAVE BEEN APPROVED BY THE AIRPORT MANAGER NO FLARE POTS ARE ALLOWED ON THE PROJECT.
- SOIL, DEBRIS, AND LOOSE MATERIAL DROPPED OR TRUCKED ONTO AIRPORT ROADS, TAXIWAYS, AND SOO SURFACES, OR WHICH CAN BE BLOWN ONTO SUCH SURFACES, SHALL BE IMMEDIATELY SWEEP, PICKED UP AND REMOVED, OR PLACED INTO CLOSED CONTAINERS. ANY DAMAGE TO AIRPORT PROPERTY SHALL BE REPAIRED IMMEDIATELY AT NO COST TO THE OWNER.
- EACH CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND MAINTAINING AIRPORT LIGHTING AND NAVIGATIONAL ELECTRICAL SYSTEMS DURING CONSTRUCTION. A CONTACT PERSON AND TELEPHONE NUMBER FOR 24 HOUR EMERGENCY IMMEDIATE REPAIR SHALL BE SUBMITTED TO THE AIRPORT MANAGER AND ENGINEER. HAUL ROUTES CROSSING PAVEMENT, DRAINAGE, MISCELLANEOUS STRUCTURES AND/OR AIRFIELD CABLES SHALL BE PROTECTED FROM DAMAGE.
- ALL AIRCRAFT AND AIRPORT OPERATIONS HAVE THE RIGHT-OF-WAY. CONTRACTOR TO YIELD TO VEHICLES AND REMAIN CLEAR AT ALL TIMES.
- CONTRACTOR SHALL PLACE, SECURE, AND MAINTAIN LIGHTED BARRICADES AND CLOSURE CROSSES WHEN A RUNWAY/TAXIWAY/APRON IS CLOSED OR AS REQUIRED BY THE PLANS AND DESIGNATED BY THE ENGINEER.
- CONTRACTOR SHALL MARK HAZARDOUS AREA WITH STEADY-BURNING OR FLASHING RED AND YELLOW LIGHTS DURING PERIODS OF LOW VISIBILITY AS REQUIRED.
- THE CONTRACTOR SHALL PERIODICALLY PERFORM ONSITE INSPECTIONS THROUGHOUT THE DURATION OF THE PROJECT WITH THE IMMEDIATE REMEDY OF ANY DIFFERENCES, WHETHER CAUSED BY NEGLIGENCE, OVERSIGHT, OR PROJECT SCOPE CHANGE.
- CONTRACTOR SHALL MOVE MAINTENANCE OF TRAFFIC COMPONENTS AT THE WRITTEN DIRECTION OF THE ENGINEER AT NO ADDITIONAL COST.
- CONTRACTOR SHALL NOT REMOVE THE BARRICADES WITHOUT THE APPROVAL BY THE ENGINEER.
- CONTRACTOR SHALL MAINTAIN FLASHERS, SIGNS AND/OR BARRICADES AS REQUIRED BY THE PLANS, CITY OR COUNTY REGULATIONS OR CONTRACTOR ACTIVITIES. CONTRACTOR SHALL OBTAIN ANY AND ALL REQUIRED LOCAL PERMITS UNLESS SPECIFIED OTHERWISE.
- THE CONTRACTOR SHALL UTILIZE WATER AND/OR CHEMICALS APPROVED BY THE ENGINEER AS NECESSARY TO CONTROL DUST.
- UNLESS SPECIFIED OTHERWISE, COST FOR THE ABOVE IS TO BE CONSIDERED INCIDENTAL TO THE PROJECT. SEPARATE PAYMENT SHALL NOT BE MADE.



LEGEND

- EXISTING IMPROVEMENTS
- PROPOSED STAGE 4 IMPROVEMENTS
- EXISTING BUILDINGS
- PROPOSED HAUL ROUTE AND EQUIPMENT PARKING AREA
- PROPOSED STAGE 4 BARRICADES

APR 03, 2014, 11:53 AM HAGC000382 p:\sps-sv2306\hanson\Documents\Projects\Documents\1340058\1340058D\CAD\Map\Sheet\G-004-STG

RB020

REVISION	DATE

CRAWFORD COUNTY AIRPORT
ROBINSON
CRAWFORD COUNTY, ILLINOIS

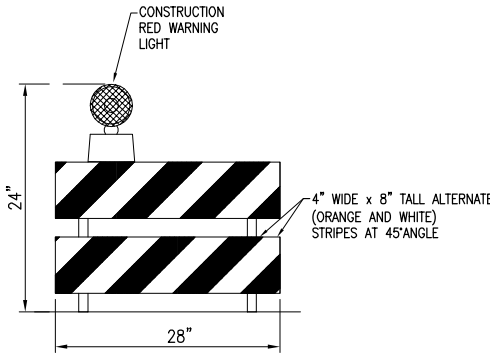
Hanson Proj. No. 1340058	
Filename G-004-STG.dwg	
Scale 1" = 500'	
Date 03/07/14	
LAYOUT	09/09/13
DRAWN	BAK 09/09/13
REVIEWED	CAH/BSS 03/07/14

HANSON
Professional Services Inc. 2014
1525 South Sixth Street
Springfield, Illinois 62703-2986
Ph: (217) 788-2450 Fax: (217) 788-2503
www.hanson-inc.com
Offices Nationwide

REPLACE MRL AND
MITL SYSTEMS

PROPOSED AREA 4
STAGING PLAN

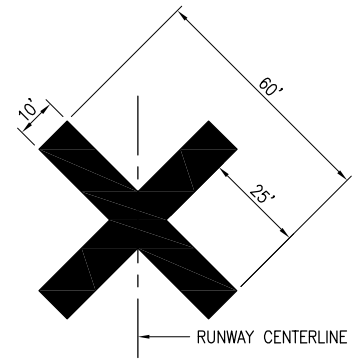
S.B.C. PROJ.: 3-17-SBGP-XX
IL PROJ.: RSY-4334



MODIFIED TYPE II BARRICADE
NOT TO SCALE

BARRICADE NOTES

- IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO PLACE AND MAINTAIN BARRICADES AS SHOWN ON THE PLANS AND AS DIRECTED BY THE AIRPORT MANAGER.
- ALL CONSTRUCTION SIGNS AND TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES INCLUDING THE ILLINOIS SUPPLEMENT (LATEST EDITION) AND THE FAA ADVISORY CIRCULARS (LATEST EDITION) UNLESS NOTED OTHERWISE. THE FAA OR MORE STRINGENT SPECIFICATIONS SHALL GOVERN.
- MODIFIED TYPE II BARRICADES SHALL BE SPACED END TO END THE WIDTH OF THE PAVEMENT IN 4' INCREMENTS AS DIRECTED BY THE ENGINEER. BARRICADES ARE TO BE SET BACK 66' FROM THE ACTIVE TAXIWAY CENTERLINE OR AS SHOWN ON THE PLANS.
- CONSTRUCTION RED WARNING LIGHT: THESE ARE PORTABLE, LENS DIRECTED, ENCLOSED LIGHTS. THE COLOR OF THE LIGHT EMITTED SHALL BE RED. THEY MAY BE USED IN EITHER A STEADY BURN (TYPE C) OR LOW INTENSITY FLASHING MODE (TYPE A) UNLESS NOTED OTHERWISE.
- THE LIGHTING SHALL BE MAINTAINED IN OPERATION DURING THE HOURS OF DARKNESS BETWEEN 1/2 HOUR AFTER SUNSET AND 1/2 HOUR BEFORE SUNRISE AND WHEN CONDITIONS EXIST WHICH TEND TO OBSCURE VISION.
- BARRICADES SHALL BE SECURED TO THE GROUND BY APPROVED METHODS TO PREVENT MOVEMENT BY PROP WASH, JET BLAST OR OTHER WIND CURRENTS.
- THE COLOR COMBINATION ON TYPE II BARRICADES IS ORANGE AND WHITE. THE ORANGE STRIPES SHALL BE ENCAPSULATED LENS REFLECTIVE SHEETING. THE WHITE STRIPES SHALL BE EITHER ENCAPSULATED OR ENCLOSED LENS REFLECTIVE SHEETING AND MUST BE IN ACCEPTABLE CONDITION.
- COST FOR PLACING, MAINTAINING, AND REMOVING BARRICADES WILL BE CONSIDERED AS AN INCIDENTAL ITEM TO THE CONTRACT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.



TEMPORARY CLOSURE CROSS DETAIL
NOT TO SCALE

- TEMPORARY "CLOSED RUNWAY" MARKINGS SHALL BE "AVIATION YELLOW"
- TEMPORARY "CLOSED RUNWAY" MARKINGS SHALL BE CONSTRUCTED OF PLYWOOD, DOUBLE-LAYERED SNOW FENCE OR APPROVED FABRIC AND SHALL BE SECURED TO PAVEMENT BY SANDBAGS OR OTHER APPROVED METHOD.
- TEMPORARY "CLOSED RUNWAY" MARKINGS SHALL BE PLACED OVER THE RUNWAY DESIGNATION NUMBERS UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
- THE PROPOSED CROSSES WILL BE PLACED EACH DAY THE RUNWAY IS CLOSED AND REMOVED WHEN THE RUNWAY IS RE-OPENED. THE CONTRACTOR WILL BE RESPONSIBLE FOR THE PLACEMENT AND REMOVAL OF THE CROSSES. "CLOSED RUNWAY" MARKINGS SHALL NOT BE A PAY ITEM AND SHALL BE INCIDENTAL TO OTHER CONTRACT BID ITEMS.

GENERAL NOTES

- THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIAL, EQUIPMENT, AND TRANSPORTATION NECESSARY TO CONSTRUCT ALL ELEMENTS OF THE PROJECT AS DESCRIBED IN THE CONSTRUCTION PLANS AND SPECIFICATIONS.
- THE RULES, REGULATIONS, AND SPECIFICATIONS NOTED HEREIN SHALL BE CONSIDERED AS MINIMUM REQUIREMENTS. THEY SHALL NOT PROHIBIT THE CONTRACTOR FROM FURNISHING AND INSTALLING HIGHER GRADES OF MATERIAL THAN ARE SPECIFIED HEREIN.
- THE CONSTRUCTION ENTRANCE AS SHOWN ON THE SAFETY PLAN SHALL BE USED FOR THE PROJECT. ACCESS TO THE PROJECT FOR ALL HAULING OF MATERIALS AND EQUIPMENT SHALL BE RESTRICTED TO THE DESIGNATED CONSTRUCTION ENTRANCE AND HAUL ROUTE. ACCESS TO THE WORK AREAS FROM THE STAGING AREA SHALL BE COORDINATED WITH THE RESIDENT ENGINEER/RESIDENT PROJECT REPRESENTATIVE AND AIRPORT MANAGEMENT.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROTECT, PRESERVE AND REPAIR THE EXISTING AIRFIELD AND ROADWAY PAVEMENTS AT ALL TIMES. THE CONTRACTOR SHALL REPAIR ANY DAMAGE TO EXISTING ELECTRICAL, DRAINAGE, AND PAVEMENT STRUCTURES AT NO ADDITIONAL COST TO THE CONTRACT.
- CONTRACTOR IS REQUIRED TO PROVIDE THEIR OWN RESTROOM FACILITIES.
- UNLESS OTHERWISE NOTED, ALL DISTURBED AREAS OUTSIDE OF THE PROPOSED CONSTRUCTION LIMITS SHALL BE GRADED, SEEDED AND/OR HYDROMULCH SEEDED AT NO ADDITIONAL COST TO THE CONTRACT.
- ALL WASTE MATERIAL SHALL BE HAULED FROM THE AIRPORT AND PROPERLY DISPOSED OF UNLESS OTHERWISE SPECIFIED HEREIN.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING PERMITS FOR HAULING ON PUBLIC ROADS, AS APPLICABLE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CORRECTING ANY DAMAGES TO ANY PAVEMENTS (PUBLIC OR PRIVATE) CAUSED BY HIS/HER CONSTRUCTION EQUIPMENT OR PERSONNEL.
- THE OWNER SHALL HAVE THE RIGHT OF FIRST REFUSAL FOR ALL SALVAGEABLE MATERIAL REMOVED ON THE PROJECT.
- THE CONTRACTOR SHALL PROVIDE ONE SET OF REDLINED AS-BUILT DRAWINGS TO THE RESIDENT ENGINEER/RESIDENT PROJECT REPRESENTATIVE AT THE COMPLETION OF THE PROJECT.
- CONTRACTOR SHALL NOTE THAT ALL AREAS WITHIN THE AIRPORT PROPERTY LINE AND OUTSIDE THE CONSTRUCTION LIMITS MAY BE USED FOR AGRICULTURAL PURPOSES. THE CONSTRUCTION LIMITS SHALL BE RESTRICTED TO AREAS THAT ARE ABSOLUTELY NECESSARY TO DISTURB TO COMPLETE THE REQUIRED WORK ITEMS. LIMITS SHALL BE COORDINATED WITH THE RESIDENT ENGINEER PRIOR TO BEGINNING ANY WORK. ALL AREAS WHICH HAVE BEEN FARMED AND OR DESIGNATED TO BE FARMED AFTER THE PROJECT COMPLETION, AND HAVE BEEN DISTURBED BY CONSTRUCTION ACTIVITY, SHALL BE CHISEL PLOWED (36" MAX.) OR OTHERWISE SCARIFIED TO RETURN THE AREA TO A REASONABLE TILLABLE CONDITION (IF SO PERMITTED BY THE AIRPORT MANAGER.)
- CONTRACTOR SHALL RESTORE TO ORIGINAL CONDITION ALL GRASS, STONE, OR PAVEMENT DISTURBED BY CONTRACTOR'S CONSTRUCTION OPERATIONS, STAGING, AND CONSTRUCTION ACCESS ROUTES. DISTURBED AREAS WILL BE REPAIRED, GRADED, MULCHED AND SEEDED UNLESS OTHERWISE NOTED. STAGING AREA AND SITE ACCESS RESTORATION SHALL BE INCLUDED IN THE COST OF THE PROJECT.
- THE PROJECT PAY ITEMS ARE INTENDED TO BE INCLUSIVE OF ALL WORK TO BE PERFORMED AS SHOWN IN THESE PLANS. ALL INCIDENTAL WORK REQUIRED TO COMPLETE THE PROJECT TO THE SATISFACTION OF THE RESIDENT ENGINEER/RESIDENT PROJECT REPRESENTATIVE IS TO BE INCLUDED IN THE COSTS OF PERFORMING THESE ITEMS.
- APPROXIMATE LOCATIONS OF UNDERGROUND UTILITIES ARE SHOWN THROUGHOUT THESE PLANS. THE CONTRACTOR SHALL DETERMINE EXACT LOCATIONS AND PROTECT THESE UTILITIES DURING CONSTRUCTION. ANY UTILITIES DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. CONTRACTOR SHALL COORDINATE WITH THE PROPER PERSONS FOR THE PURPOSE OF LOCATING AND PROTECTING EXISTING UNDERGROUND UTILITIES.
- THE CONTRACTOR MUST AT ALL TIMES MAINTAIN PROPER DRAINAGE FOR ALL AREAS AFFECTED BY HIS WORK.

SAFETY NOTES

- FOLLOWING ARE THE CONSTRUCTION SAFETY PROCEDURES THAT THE CONTRACTOR SHALL FOLLOW THROUGHOUT THIS PROJECT. ADDITIONAL REQUIREMENTS ARE SHOWN ON THE SAFETY AND PHASING NOTES AND DETAILS SHEET.
- ALL PROVISIONS OF THE LATEST EDITION OF FAA ADVISORY CIRCULAR AC 150/5370-2 (CURRENT EDITION), "OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION", APPLY TO THIS CONTRACT, EXCEPT AS MODIFIED BY THIS SAFETY PLAN, OR AS MODIFIED BY THE OWNER THROUGH THE RESIDENT ENGINEER AT THE PRECONSTRUCTION CONFERENCE, OR DURING THE COURSE OF THE CONTRACT.
- THE CONTRACTORS SHALL MINIMIZE DISRUPTION OF STANDARD OPERATING PROCEDURES FOR AERONAUTICAL ACTIVITY BY REMAINING WITHIN THE PRESCRIBED STAGING, CONSTRUCTION, AND PHASING AREAS PRESENTED ON THE PROJECT SAFETY AND PHASING PLANS.
- NO UNAUTHORIZED PERSONNEL SHALL ENTER ANY AREA OF THE AIRPORT THAT COULD POTENTIALLY BE HAZARDOUS. THE ENGINEER, ENGINEER'S REPRESENTATIVE AND/OR AIRPORT MANAGER RESERVE THE RIGHT TO SUSPEND OPERATIONS IN ORDER TO MAINTAIN SAFETY AT THE AIRPORT.
- CONTRACTOR EQUIPMENT, VEHICLES, AND PROJECT MATERIALS SHALL BE STORED AT THE STAGING AREA SHOWN ON THE PLAN VIEW, EXCEPT AS OTHERWISE PROVIDED FOR AT THE PRECONSTRUCTION CONFERENCE.
- ALL CONSTRUCTION EQUIPMENT OPERATING IN THE PRESCRIBED CONSTRUCTION AREA IS REQUIRED TO DISPLAY A CHECKERBOARD FLAG PROPERLY LOCATED AND/OR A ROTATING BEACON (STROBE) AS SPECIFIED IN AC 150/5210-5, "PAINTING, MARKING, AND LIGHTING OF VEHICLES USED ON AN AIRPORT" LATEST EDITION.
- NO CONSTRUCTION MATERIAL STOCKPILES SHALL BE LOCATED WITHIN 250' OF RUNWAY 9-27 CENTERLINE WHEN ACTIVE, WITHIN 75' OF RUNWAY 17-35 CENTERLINE WHEN ACTIVE, WITHIN 66' OF AN ACTIVE TAXIWAY CENTERLINE, WITHIN 58' OF AN ACTIVE TAXI LANE CENTERLINE, OR PENETRATE A PART 77 IMAGINARY SURFACE (PROVIDED BY THE ENGINEER) EXTENDING OUT AND UPWARDS FROM ALL SIDES OF AN ACTIVE RUNWAY.
- CLOSED AIRFIELD PHASING AREAS, OPEN TRENCHES, AND STOCKPILED MATERIALS AT THE CONSTRUCTION SITE SHALL BE PROMINENTLY MARKED WITH LIGHTED BARRICADES WITH STEADY BURNING OR FLASHING RED LIGHTS AS SPECIFIED IN 150/5370-2, "OPERATIONAL SAFETY ON AIRPORT DURING CONSTRUCTION, LATEST EDITION. LIGHTED BARRICADES MUST BE NO TALLER THAN 24" (EXCLUSIVE OF SUPPLEMENTARY LIGHTS) ON THE TAXIWAYS AND COMPLY WITH ADVISORY CIRCULAR 150/5370-2, LATEST EDITION. CONTRACTOR SHALL NIGHT CHECK BARRICADES DAILY FOR PROPER OPERATION.
- NO OPEN TRENCHES WITHIN 250' OF RUNWAY 9-27 CENTERLINE WHEN ACTIVE, WITHIN 75' OF RUNWAY 17-35 CENTERLINE WHEN ACTIVE, WITHIN 66' OF AN ACTIVE TAXIWAY CENTERLINE, OR WITHIN 58' OF AN ACTIVE TAXI LANE CENTERLINE, WILL BE PERMITTED. OTHER TRENCHES SHALL BE MAINTAINED SAFE, I.E., BARRICADED OR COVERED WITH STEEL PLATES IN ALL OTHER AREAS.
- OPEN TRENCHES, EXCAVATIONS, AND STOCKPILED MATERIALS AT THE CONSTRUCTION SITE SHOULD BE PROMINENTLY MARKED WITH ORANGE FLAGS AND LIGHTED WITH FLASHING YELLOW LIGHTS DURING HOURS OF RESTRICTED VISIBILITY AND/OR DARKNESS.
- NO OPEN FLAME WELDING OR TORCH CUTTING OPERATION IS PERMITTED UNLESS ADEQUATE FIRE AND SAFETY PRECAUTIONS ARE PROVIDED AND HAVE BEEN APPROVED BY THE AIRPORT MANAGER. NO FLARE POTS ARE ALLOWED ON THE PROJECT.
- SOIL, DEBRIS, AND LOOSE MATERIAL DROPPED OR TRUCKED ONTO AIRPORT ROADS, TAXIWAYS, AND SOD SURFACES, OR WHICH CAN BE BLOWN ONTO SUCH SURFACES, SHALL BE IMMEDIATELY SWEEPED, PICKED UP AND REMOVED, OR PLACED INTO CLOSED CONTAINERS. ANY DAMAGE TO AIRPORT PROPERTY SHALL BE REPAIRED IMMEDIATELY AT NO COST TO THE OWNER.
- EACH CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND MAINTAINING AIRPORT LIGHTING AND NAVIGATIONAL ELECTRICAL SYSTEMS DURING CONSTRUCTION. A CONTACT PERSON AND TELEPHONE NUMBER FOR 24 HOUR EMERGENCY IMMEDIATE REPAIR SHALL BE SUBMITTED TO THE AIRPORT MANAGER AND ENGINEER. HAUL ROUTES CROSSING PAVEMENT, DRAINAGE, MISCELLANEOUS. STRUCTURES AND/OR AIRFIELD CABLES SHALL BE PROTECTED FROM DAMAGE.
- ALL AIRCRAFT AND AIRPORT OPERATIONS HAVE THE RIGHT-OF-WAY. CONTRACTOR TO YIELD TO VEHICLES AND REMAIN CLEAR AT ALL TIMES.
- CONTRACTOR SHALL PLACE, SECURE, AND MAINTAIN LIGHTED BARRICADES AND CLOSURE CROSSES WHEN A RUNWAY/TAXIWAY/APRON IS CLOSED OR AS REQUIRED BY THE PLANS AND DESIGNATED BY THE ENGINEER.
- CONTRACTOR SHALL MARK HAZARDOUS AREA WITH STEADY-BURNING OR FLASHING RED AND YELLOW LIGHTS DURING PERIODS OF LOW VISIBILITY AS REQUIRED.
- THE CONTRACTOR SHALL PERIODICALLY PERFORM ONSITE INSPECTIONS THROUGHOUT THE DURATION OF THE PROJECT WITH THE IMMEDIATE REMEDY OF ANY DIFFERENCES, WHETHER CAUSED BY NEGLIGENCE, OVERSIGHT, OR PROJECT SCOPE CHANGE.
- CONTRACTOR SHALL MOVE MAINTENANCE OF TRAFFIC COMPONENTS AT THE DIRECTION OF THE AIRPORT MANAGER AND/OR THE RESIDENT ENGINEER/RESIDENT PROJECT REPRESENTATIVE AT NO ADDITIONAL COST.
- CONTRACTOR SHALL NOT REMOVE THE BARRICADES WITHOUT THE APPROVAL BY THE AIRPORT MANAGER AND/OR RESIDENT ENGINEER/RESIDENT PROJECT REPRESENTATIVE.
- CONTRACTOR SHALL MAINTAIN FLASHERS, SIGNS AND/OR BARRICADES AS REQUIRED BY THE PLANS, CITY OR COUNTY REGULATIONS OR CONTRACTOR ACTIVITIES. CONTRACTOR SHALL OBTAIN ANY AND ALL REQUIRED LOCAL PERMITS UNLESS SPECIFIED OTHERWISE.
- THE CONTRACTOR SHALL UTILIZE WATER AND/OR CHEMICALS APPROVED BY THE ENGINEER AS NECESSARY TO CONTROL DUST.
- CONSTRUCTION EQUIPMENT OR CONSTRUCTION ACTIVITY WILL NOT BE PERMITTED WITHIN THE RUNWAY SAFETY AREA OF ANY ACTIVE RUNWAY CENTERLINE OR WITHIN THE OBJECT FREE AREA OF AN ACTIVE TAXIWAY OR APRON.
- UNLESS SPECIFIED OTHERWISE, COST FOR THE ABOVE IS TO BE CONSIDERED INCIDENTAL TO THE PROJECT. SEPARATE PAYMENT SHALL NOT BE MADE.

REVISION	DATE

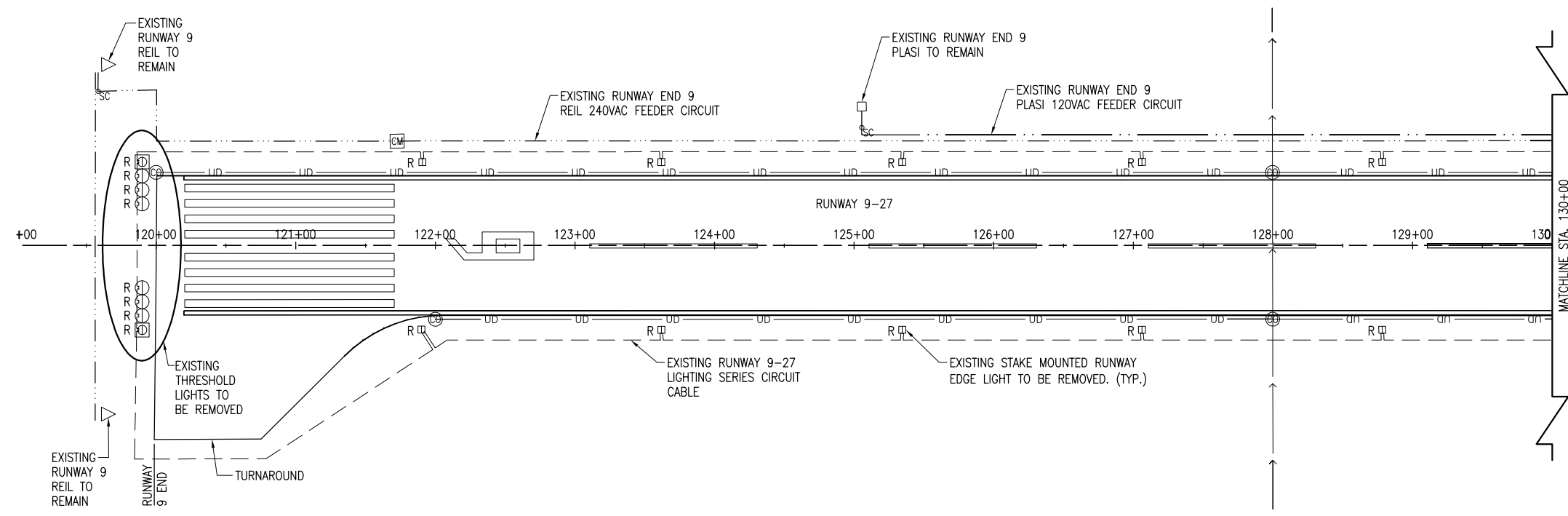
CRAWFORD COUNTY AIRPORT
ROBINSON
CRAWFORD COUNTY, ILLINOIS
S.B.C. PROJ.: 3-17-SBGP-XX
ILL. PROJ.: RSY-4334

Hanson Proj. No. 13A0058	09/09/13
Filename: G-501-ELEC.DWG	BAK 09/09/13
Scale: 1" = 500'	REVIEWED CAH 03/07/14
Date: 03/07/14	
LAYOUT	
DRAWN	

HANSON
Professional Services Inc. 2014
1525 South Sixth Street
Springfield, Illinois 62703-2986
Ph: (217) 788-2450 Fax: (217) 788-2503
www.hanson-inc.com
Offices Nationwide

REPLACE MIRL AND
MITL SYSTEMS
CONSTRUCTION SAFETY
DETAILS AND NOTES

MAR 25, 2014 2:15 PM H:\GLO00382
pw:\sps-sv206\hanson\dom\hanson\Projects\Documents\13\jobs\13A0058\13A0058D\CAD\Work\Sheet\G-501-ELEC



AIRFIELD LIGHTING REMOVAL NOTES

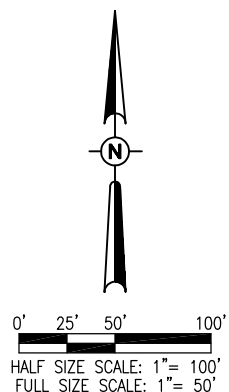
1. ALL WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS SHALL BE COORDINATED WITH THE AIRPORT DIRECTOR/MANAGER. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
2. CONTRACTOR SHALL EXAMINE THE SITE TO DETERMINE THE EXTENT OF THE WORK. CONTRACTOR SHALL FIELD VERIFY EXISTING SITE CONDITIONS. CONTRACTOR SHALL FIELD VERIFY RESPECTIVE CIRCUITS AND POWER SOURCES PRIOR TO REMOVING OR DISCONNECTING THE RESPECTIVE AIRFIELD LIGHTING, TAXI SIGN, NAVAID, OR OTHER DEVICE.
3. CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF FAA AC NO. 150/5370-2F (OR MOST CURRENT ISSUE) "OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION".
4. CONTRACTOR SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS OF NFPA 70E - STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE.
5. THE EXISTING AIRFIELD (RUNWAY & TAXIWAY) LIGHTS AND THEIR ISOLATED TRANSFORMERS DESIGNATED FOR REMOVAL SHALL BE REMOVED AND TURNED OVER TO THE AIRPORT. THE CONCRETE LIGHT BASES SHALL BE REMOVED AND DISPOSED OF, OFF THE AIRPORT SITE IN A LEGAL MANNER. REMOVAL OF THE EXISTING AIRFIELD LIGHTS WILL BE PAID FOR UNDER ITEM AR125901 REMOVE STAKE MOUNTED LIGHT, PER EACH AND AR125902 REMOVE BASE MOUNTED LIGHT, PER EACH.
6. THE EXISTING TAXI GUIDANCE SIGNS, AND THEIR ISOLATED TRANSFORMERS DESIGNATED FOR REMOVAL SHALL BE REMOVED AND TURNED OVER TO THE AIRPORT. THE CONCRETE FOUNDATIONS SHALL BE REMOVED AND DISPOSED OF, OFF THE AIRPORT SITE IN A LEGAL MANNER. REMOVAL OF THE EXISTING TAXI GUIDANCE SIGNS WILL BE PAID FOR UNDER ITEM AR125904.
7. THE EXISTING AIRFIELD LIGHTING CABLES ASSOCIATED WITH AIRFIELD LIGHTING REMOVALS SHALL BE ABANDONED IN PLACE UNLESS IT CONFLICTS WITH THE INSTALLATION OF A PROPOSED LIGHT OR CABLE, PAVEMENT, OR OTHER WORK, THEN IT SHALL BE REMOVED AND DISPOSED OF OFF SITE AT NO ADDITIONAL COST TO THE CONTRACT. CONTRACTOR MAY REMOVE ABANDONED CABLES AT NO ADDITIONAL COST TO THE CONTRACT AND SHALL HAVE THE SALVAGE RIGHTS TO ABANDONED CABLES.
8. ALL ABOVEGROUND JUMPERS SHALL BE IN A DUCT WITH ALL CONNECTIONS SEALED. THE CONTRACTOR SHALL SECURE, IDENTIFY AND PLACE ALL TEMPORARY EXPOSED WIRING IN CONDUIT, DUCT, OR UNIT DUCT TO PREVENT ELECTROCUTION AND FIRE IGNITION SOURCES AS PER THE REQUIREMENTS OF FAA 150/5370-2F, OPERATION SAFETY ON AIRPORTS DURING CONSTRUCTION, SECTION 218, c.
9. THE CONTRACTOR IS REQUIRED TO FILL IN ALL HOLES AND DEPRESSIONS RESULTING FROM THE LIGHT, AND/OR BASE REMOVAL WITH EARTH MATERIAL. THE AREAS SHALL BE COMPACTED TO PREVENT FUTURE SETTLEMENT AND FERTILIZED, SEEDED, AND MULCHED IN ACCORDANCE WITH ITEMS 901 AND 908 RESPECTIVELY.
10. WHEN A RESPECTIVE RUNWAY IS CLOSED THE NAVAIDS FOR THAT RUNWAY SHALL BE SHUT OFF.
11. CONTRACTOR SHALL CONFIRM QUANTITY OF LIGHTS TO BE REMOVED WITH RESIDENT ENGINEER/RESIDENT PROJECT REPRESENTATIVE PRIOR TO REMOVAL.
12. NO CONNECTION TO AN ACTIVE LIGHTING CIRCUIT SHALL BE BROKEN UNTIL THE CIRCUIT HAS BEEN TURNED OFF IN ACCORDANCE WITH THE ABOVE NOTE 1.

LEGEND

- EXISTING PAVEMENT
- EXISTING ELECTRICAL DUCT
- EXISTING MARKING
- EXISTING ELECTRICAL CABLE/AIRFIELD LIGHTING CABLE
- EXISTING REIL CIRCUIT
- EXISTING PLASI CIRCUIT
- EXISTING UNDERDRAIN
- EXISTING UNDERDRAIN CLEANOUT
- EXISTING STORM SEWER
- EXISTING INLET
- EXISTING BASE MOUNTED RUNWAY LIGHT TO BE REMOVED
- EXISTING STAKE MOUNTED RUNWAY LIGHT TO BE REMOVED
- EXISTING STAKE MOUNTED THRESHOLD LIGHT TO BE REMOVED
- EXISTING BASE MOUNTED THRESHOLD LIGHT TO BE REMOVED
- EXISTING STAKE MOUNTED TAXIWAY LIGHT TO BE REMOVED
- EXISTING BASE MOUNTED TAXIWAY LIGHT TO BE REMOVED
- EXISTING TAXI GUIDANCE SIGN TO BE REMOVED
- EXISTING CABLE MARKER
- EXISTING DUCT MARKER
- EXISTING REILS
- EXISTING PLASI
- EXISTING SPLICE CAN
- EXISTING WIND CONE

THE LOCATION, SIZE, AND TYPE OF MATERIAL OF EXISTING UNDERGROUND AND/OR ABOVEGROUND UTILITIES INDICATED ON THE PLANS ARE NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY WHATEVER IN RESPECT TO THE ACCURACY, COMPLETENESS, OR SUFFICIENCY OF THE INFORMATION. THERE IS NO GUARANTEE, EITHER EXPRESSED OR IMPLIED, THAT THE LOCATIONS, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND UTILITIES INDICATED ARE REPRESENTATIVE OF THOSE TO BE ENCOUNTERED IN THE CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ACTUAL LOCATION OF ALL SUCH FACILITIES, INCLUDING SERVICE CONNECTIONS TO UNDERGROUND UTILITIES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES OF HIS OPERATIONAL PLANS AND SHALL OBTAIN FROM THE RESPECTIVE UTILITY COMPANIES DETAILED INFORMATION AND ASSISTANCE RELATIVE TO THE LOCATION OF THEIR FACILITIES AND THE WORKING SCHEDULE OF THE COMPANIES FOR REMOVAL OR ADJUSTMENT WHERE REQUIRED. IN THE EVENT AN UNEXPECTED UTILITY INTERFERENCE IS ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY COMPANY OF JURISDICTION. THE OWNER'S REPRESENTATIVE AND/OR THE RESIDENT ENGINEER SHALL ALSO BE IMMEDIATELY NOTIFIED. ANY DAMAGE TO SUCH MAINS AND SERVICES SHALL BE RESTORED TO SERVICE AT ONCE AND PAID FOR BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CONTRACT.

ALL UTILITY CABLES AND LINES SHALL BE LOCATED BY THE RESPECTIVE UTILITY. **CONTACT JULIE (JOINT UTILITY LOCATION INFORMATION FOR EXCAVATORS) FOR UTILITY INFORMATION, PHONE: 1-800-892-0123.** CONTACT THE FAA (FEDERAL AVIATION ADMINISTRATION) FOR ASSISTANCE IN LOCATING FAA CABLES AND UTILITIES. LOCATION OF FAA POWER, CONTROL, AND COMMUNICATION CABLES SHALL BE COORDINATED WITH AND/OR LOCATED BY THE FAA. ALSO CONTACT AIRPORT DIRECTOR/MANAGER AND AIRPORT PERSONNEL FOR ASSISTANCE IN LOCATING UNDERGROUND AIRPORT CABLES AND/OR UTILITIES. ALSO COORDINATE WORK WITH ALL ABOVEGROUND UTILITIES.



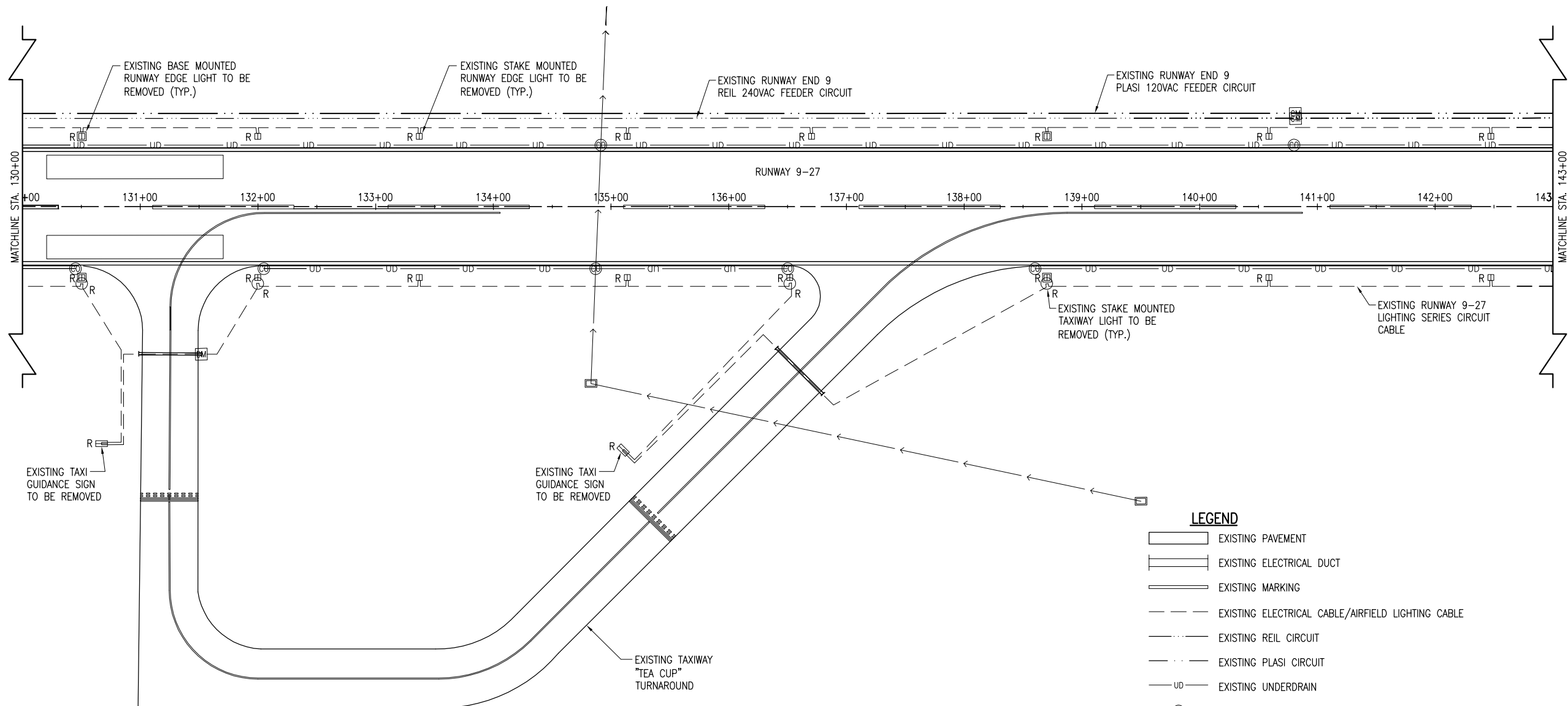
REVISION	
DATE	
CRAWFORD COUNTY AIRPORT ROBINSON CRAWFORD COUNTY, ILLINOIS	
S.B.C. PROJ.: 3-17-SBGP-XX	

Hanson Proj. No. 13A0058	07/23/13
Filename C-141-ELE.dwg	BAK 07/23/13
Scale 1" = 50'	DRAWN BAK
Date 03/07/14	REVIEWED CAH/KNL 03/07/14

HANSON
 © Copyright Hanson Professional Services Inc. 2014
Hanson Professional Services Inc.
 1525 South Sixth Street
 Springfield, Illinois 62703-2986
 Ph: (217) 788-2450 Fax: (217) 788-2503
 www.hanson-inc.com
 Offices Nationwide

REPLACE MRL AND MITL SYSTEMS
 EXISTING ELECTRICAL PLAN
 RUNWAY 9-27 STA. 119+00
 TO STA. 130+00

MAR 25, 2014 2:22 PM H4GL000382 p:\s\sp-svc\06\hanson\dom\hanson\Projects\Documents\13\jobs\13A0058\CAD\Airport\Sheet\C-141-ELE

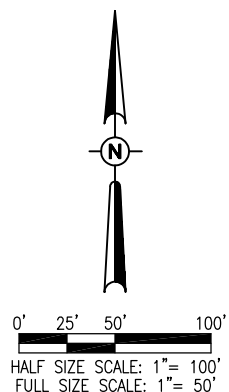


LEGEND

- EXISTING PAVEMENT
- EXISTING ELECTRICAL DUCT
- EXISTING MARKING
- EXISTING ELECTRICAL CABLE/AIRFIELD LIGHTING CABLE
- EXISTING REIL CIRCUIT
- EXISTING PLASI CIRCUIT
- EXISTING UNDERDRAIN
- EXISTING UNDERDRAIN CLEANOUT
- EXISTING STORM SEWER
- EXISTING INLET
- EXISTING BASE MOUNTED RUNWAY LIGHT TO BE REMOVED
- EXISTING STAKE MOUNTED RUNWAY LIGHT TO BE REMOVED
- EXISTING STAKE MOUNTED THRESHOLD LIGHT TO BE REMOVED
- EXISTING BASE MOUNTED THRESHOLD LIGHT TO BE REMOVED
- EXISTING STAKE MOUNTED TAXIWAY LIGHT TO BE REMOVED
- EXISTING BASE MOUNTED TAXIWAY LIGHT TO BE REMOVED
- EXISTING TAXI GUIDANCE SIGN TO BE REMOVED
- EXISTING CABLE MARKER
- EXISTING DUCT MARKER
- EXISTING REILS
- EXISTING PLASI
- EXISTING SPLICE CAN
- EXISTING WIND CONE

THE LOCATION, SIZE, AND TYPE OF MATERIAL OF EXISTING UNDERGROUND AND/OR ABOVEGROUND UTILITIES INDICATED ON THE PLANS ARE NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY WHATEVER IN RESPECT TO THE ACCURACY, COMPLETENESS, OR SUFFICIENCY OF THE INFORMATION. THERE IS NO GUARANTEE, EITHER EXPRESSED OR IMPLIED, THAT THE LOCATIONS, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND UTILITIES INDICATED ARE REPRESENTATIVE OF THOSE TO BE ENCOUNTERED IN THE CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ACTUAL LOCATION OF ALL SUCH FACILITIES, INCLUDING SERVICE CONNECTIONS TO UNDERGROUND UTILITIES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES OF HIS OPERATIONAL PLANS AND SHALL OBTAIN FROM THE RESPECTIVE UTILITY COMPANIES DETAILED INFORMATION AND ASSISTANCE RELATIVE TO THE LOCATION OF THEIR FACILITIES AND THE WORKING SCHEDULE OF THE COMPANIES FOR REMOVAL OR ADJUSTMENT WHERE REQUIRED. IN THE EVENT AN UNEXPECTED UTILITY INTERFERENCE IS ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY COMPANY OF JURISDICTION. THE OWNER'S REPRESENTATIVE AND/OR THE RESIDENT ENGINEER SHALL ALSO BE IMMEDIATELY NOTIFIED. ANY DAMAGE TO SUCH MAINS AND SERVICES SHALL BE RESTORED TO SERVICE AT ONCE AND PAID FOR BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CONTRACT.

ALL UTILITY CABLES AND LINES SHALL BE LOCATED BY THE RESPECTIVE UTILITY. **CONTACT JULIE (JOINT UTILITY LOCATION INFORMATION FOR EXCAVATORS) FOR UTILITY INFORMATION, PHONE: 1-800-892-0123.** CONTACT THE FAA (FEDERAL AVIATION ADMINISTRATION) FOR ASSISTANCE IN LOCATING FAA CABLES AND UTILITIES. LOCATION OF FAA POWER, CONTROL, AND COMMUNICATION CABLES SHALL BE COORDINATED WITH AND/OR LOCATED BY THE FAA. ALSO CONTACT AIRPORT DIRECTOR/MANAGER AND AIRPORT PERSONNEL FOR ASSISTANCE IN LOCATING UNDERGROUND AIRPORT CABLES AND/OR UTILITIES. ALSO COORDINATE WORK WITH ALL ABOVEGROUND UTILITIES.



REVISION	DATE

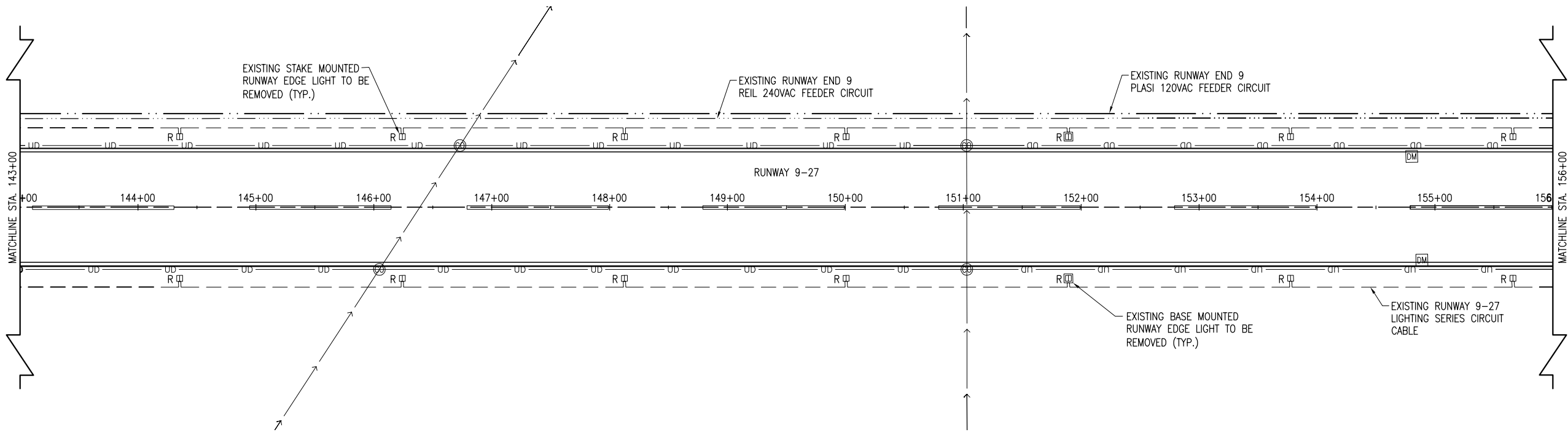
CRAWFORD COUNTY AIRPORT
ROBINSON
CRAWFORD COUNTY, ILLINOIS
S.B.C. PROJ.: 3-17-SBGP-XX
IL PROJ.: RSY-4334

Hanson Proj. No. 13A0058	BAK	07/23/13
Filename: C-141-ELE.dwg	BAK	07/23/13
Scale: 1" = 50'	BAK	07/23/13
Date: 03/07/14	BAK	07/23/13
LAYOUT	CAH/KNL	03/07/14
DRAWN		
REVIEWED		

HANSON
Professional Services Inc. 2014
1525 South Sixth Street
Springfield, Illinois 62703-2986
PH: (217) 788-2450 Fax: (217) 788-2503
www.hanson-inc.com
Offices Nationwide

REPLACE MRL AND
MITL SYSTEMS
EXISTING ELECTRICAL PLAN
RUNWAY 9-27 STA. 130+00
TO STA. 143+00

MAR 25, 2014 2:22 PM H:\GLO00382
p:\sps-svc306\hanson\dom\hanson\Projects\Documents\13\jobs\13A0058\CAD\Airport\Sheet\C-141-ELE

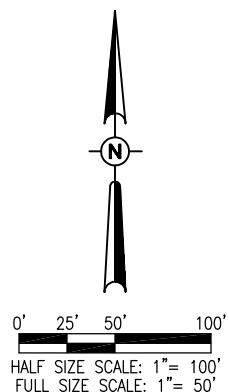


LEGEND

- EXISTING PAVEMENT
- EXISTING ELECTRICAL DUCT
- EXISTING MARKING
- EXISTING ELECTRICAL CABLE/AIRFIELD LIGHTING CABLE
- EXISTING REIL CIRCUIT
- EXISTING PLASI CIRCUIT
- EXISTING UNDERDRAIN
- EXISTING UNDERDRAIN CLEANOUT
- EXISTING STORM SEWER
- EXISTING INLET
- EXISTING BASE MOUNTED RUNWAY LIGHT TO BE REMOVED
- EXISTING STAKE MOUNTED RUNWAY LIGHT TO BE REMOVED
- EXISTING STAKE MOUNTED THRESHOLD LIGHT TO BE REMOVED
- EXISTING BASE MOUNTED THRESHOLD LIGHT TO BE REMOVED
- EXISTING STAKE MOUNTED TAXIWAY LIGHT TO BE REMOVED
- EXISTING BASE MOUNTED TAXIWAY LIGHT TO BE REMOVED
- EXISTING TAXI GUIDANCE SIGN TO BE REMOVED
- EXISTING CABLE MARKER
- EXISTING DUCT MARKER
- EXISTING REILS
- EXISTING PLASI
- EXISTING SPLICE CAN
- EXISTING WIND CONE

THE LOCATION, SIZE, AND TYPE OF MATERIAL OF EXISTING UNDERGROUND AND/OR ABOVEGROUND UTILITIES INDICATED ON THE PLANS ARE NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY WHATEVER IN RESPECT TO THE ACCURACY, COMPLETENESS, OR SUFFICIENCY OF THE INFORMATION. THERE IS NO GUARANTEE, EITHER EXPRESSED OR IMPLIED, THAT THE LOCATIONS, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND UTILITIES INDICATED ARE REPRESENTATIVE OF THOSE TO BE ENCOUNTERED IN THE CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ACTUAL LOCATION OF ALL SUCH FACILITIES, INCLUDING SERVICE CONNECTIONS TO UNDERGROUND UTILITIES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES OF HIS OPERATIONAL PLANS AND SHALL OBTAIN FROM THE RESPECTIVE UTILITY COMPANIES DETAILED INFORMATION AND ASSISTANCE RELATIVE TO THE LOCATION OF THEIR FACILITIES AND THE WORKING SCHEDULE OF THE COMPANIES FOR REMOVAL OR ADJUSTMENT WHERE REQUIRED. IN THE EVENT AN UNEXPECTED UTILITY INTERFERENCE IS ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY COMPANY OF JURISDICTION. THE OWNER'S REPRESENTATIVE AND/OR THE RESIDENT ENGINEER SHALL ALSO BE IMMEDIATELY NOTIFIED. ANY DAMAGE TO SUCH MAINS AND SERVICES SHALL BE RESTORED TO SERVICE AT ONCE AND PAID FOR BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CONTRACT.

ALL UTILITY CABLES AND LINES SHALL BE LOCATED BY THE RESPECTIVE UTILITY. **CONTACT JULIE (JOINT UTILITY LOCATION INFORMATION FOR EXCAVATORS) FOR UTILITY INFORMATION, PHONE: 1-800-892-0123.** CONTACT THE FAA (FEDERAL AVIATION ADMINISTRATION) FOR ASSISTANCE IN LOCATING FAA CABLES AND UTILITIES. LOCATION OF FAA POWER, CONTROL, AND COMMUNICATION CABLES SHALL BE COORDINATED WITH AND/OR LOCATED BY THE FAA. ALSO CONTACT AIRPORT DIRECTOR/MANAGER AND AIRPORT PERSONNEL FOR ASSISTANCE IN LOCATING UNDERGROUND AIRPORT CABLES AND/OR UTILITIES. ALSO COORDINATE WORK WITH ALL ABOVEGROUND UTILITIES.



REVISION	DATE

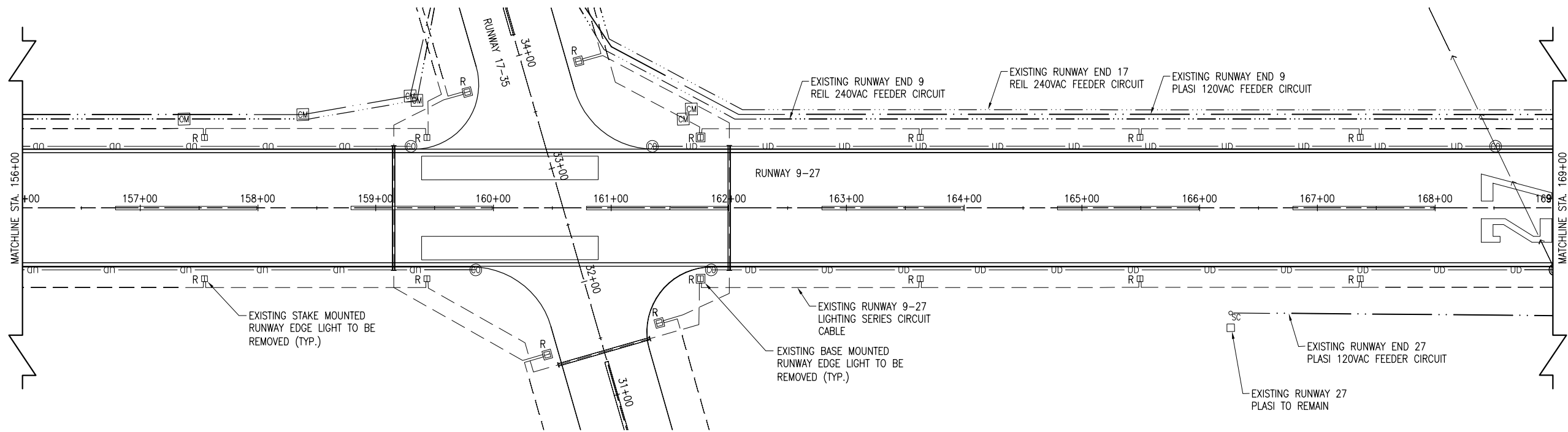
CRAWFORD COUNTY AIRPORT
ROBINSON
CRAWFORD COUNTY, ILLINOIS
IL. PROJ.: RSY-4334 S.B.C. PROJ.: 3-17-SBGP-XX

Hanson Proj. No. 13A0058	07/23/13
Filename: C-141-ELE.dwg	BAK
Scale 1" = 50'	BAK
Date 03/07/14	BAK
LAYOUT	03/07/14
DRAWN	CAH/KNL
REVIEWED	

HANSON
Professional Services Inc. 2014
1525 South Sixth Street
Springfield, Illinois 62703-2886
Ph: (217) 788-2450 Fax: (217) 788-2503
www.hanson-inc.com
Offices Nationwide

REPLACE MRL AND MITL SYSTEMS
EXISTING ELECTRICAL PLAN
RUNWAY 9-27 STA. 143+00
TO STA. 156+00

MAR 25, 2014 2:23 PM H4GL000382
p:\s\spc-svc306\hanson\dom\hanson\Projects\Documents\13\jobs\13A0058\CAD\Airport\Sheet\C-141-ELE

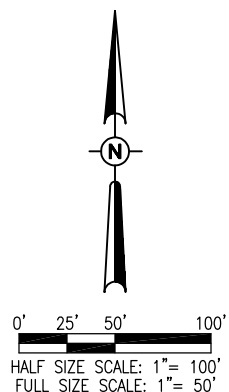


LEGEND

- EXISTING PAVEMENT
- EXISTING ELECTRICAL DUCT
- EXISTING MARKING
- EXISTING ELECTRICAL CABLE/AIRFIELD LIGHTING CABLE
- EXISTING REIL CIRCUIT
- EXISTING PLASI CIRCUIT
- EXISTING UNDERDRAIN
- EXISTING UNDERDRAIN CLEANOUT
- EXISTING STORM SEWER
- EXISTING INLET
- EXISTING BASE MOUNTED RUNWAY LIGHT TO BE REMOVED
- EXISTING STAKE MOUNTED RUNWAY LIGHT TO BE REMOVED
- EXISTING STAKE MOUNTED THRESHOLD LIGHT TO BE REMOVED
- EXISTING BASE MOUNTED THRESHOLD LIGHT TO BE REMOVED
- EXISTING STAKE MOUNTED TAXIWAY LIGHT TO BE REMOVED
- EXISTING BASE MOUNTED TAXIWAY LIGHT TO BE REMOVED
- EXISTING TAXI GUIDANCE SIGN TO BE REMOVED
- EXISTING CABLE MARKER
- EXISTING DUCT MARKER
- EXISTING REILS
- EXISTING PLASI
- EXISTING SPLICE CAN
- EXISTING WIND CONE

THE LOCATION, SIZE, AND TYPE OF MATERIAL OF EXISTING UNDERGROUND AND/OR ABOVEGROUND UTILITIES INDICATED ON THE PLANS ARE NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY WHATEVER IN RESPECT TO THE ACCURACY, COMPLETENESS, OR SUFFICIENCY OF THE INFORMATION. THERE IS NO GUARANTEE, EITHER EXPRESSED OR IMPLIED, THAT THE LOCATIONS, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND UTILITIES INDICATED ARE REPRESENTATIVE OF THOSE TO BE ENCOUNTERED IN THE CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ACTUAL LOCATION OF ALL SUCH FACILITIES, INCLUDING SERVICE CONNECTIONS TO UNDERGROUND UTILITIES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES OF HIS OPERATIONAL PLANS AND SHALL OBTAIN FROM THE RESPECTIVE UTILITY COMPANIES DETAILED INFORMATION AND ASSISTANCE RELATIVE TO THE LOCATION OF THEIR FACILITIES AND THE WORKING SCHEDULE OF THE COMPANIES FOR REMOVAL OR ADJUSTMENT WHERE REQUIRED. IN THE EVENT AN UNEXPECTED UTILITY INTERFERENCE IS ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY COMPANY OF JURISDICTION. THE OWNER'S REPRESENTATIVE AND/OR THE RESIDENT ENGINEER SHALL ALSO BE IMMEDIATELY NOTIFIED. ANY DAMAGE TO SUCH MAINS AND SERVICES SHALL BE RESTORED TO SERVICE AT ONCE AND PAID FOR BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CONTRACT.

ALL UTILITY CABLES AND LINES SHALL BE LOCATED BY THE RESPECTIVE UTILITY. **CONTACT JULIE (JOINT UTILITY LOCATION INFORMATION FOR EXCAVATORS) FOR UTILITY INFORMATION, PHONE: 1-800-892-0123.** CONTACT THE FAA (FEDERAL AVIATION ADMINISTRATION) FOR ASSISTANCE IN LOCATING FAA CABLES AND UTILITIES. LOCATION OF FAA POWER, CONTROL, AND COMMUNICATION CABLES SHALL BE COORDINATED WITH AND/OR LOCATED BY THE FAA. ALSO CONTACT AIRPORT DIRECTOR/MANAGER AND AIRPORT PERSONNEL FOR ASSISTANCE IN LOCATING UNDERGROUND AIRPORT CABLES AND/OR UTILITIES. ALSO COORDINATE WORK WITH ALL ABOVEGROUND UTILITIES.



REVISION	DATE

CRAWFORD COUNTY AIRPORT
ROBINSON
CRAWFORD COUNTY, ILLINOIS

IL. PROJ.: RSY-4334 S.B.C. PROJ.: 3-17-SBGP-XX

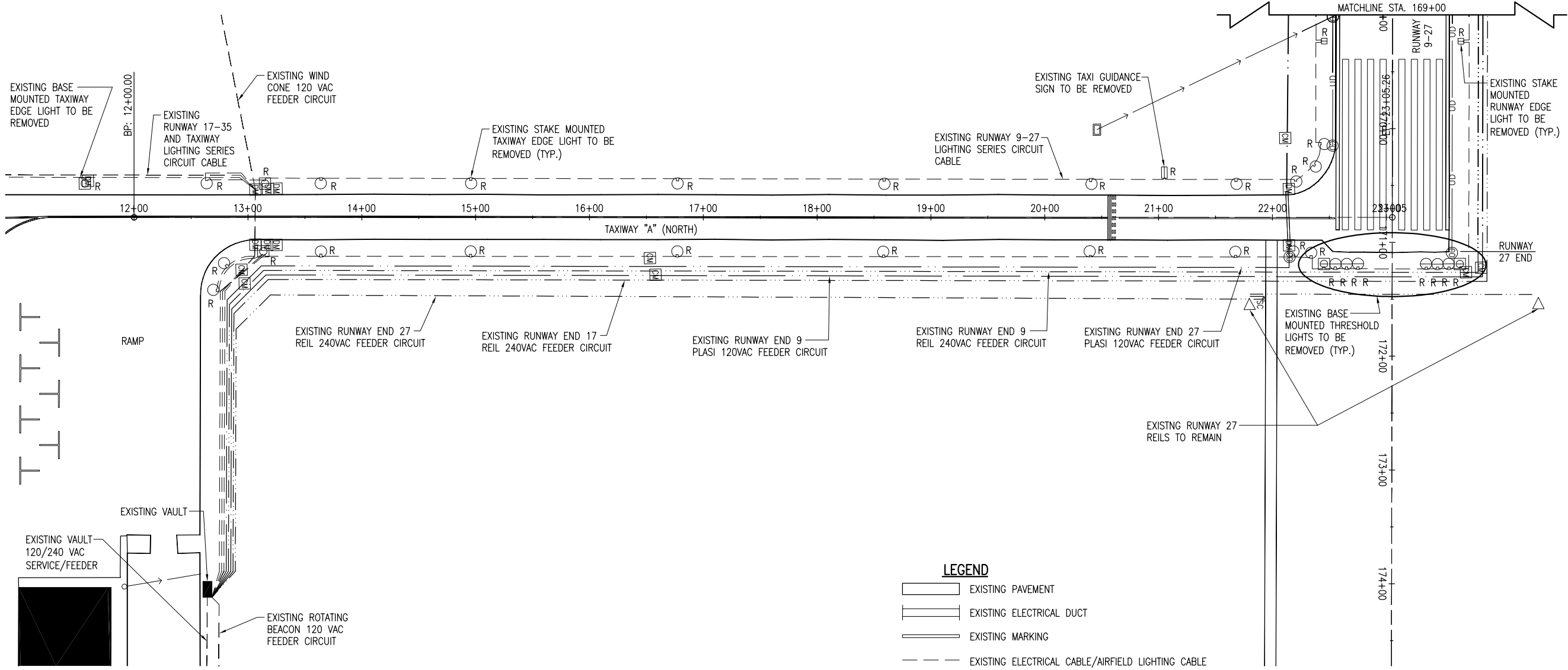
Hanson Proj. No. 13A0058	BAK	07/23/13
Filename: C-141-ELE.dwg	BAK	07/23/13
Scale 1" = 50'	BAK	07/23/13
Date 03/07/14	BAK	07/23/13
LAYOUT	BAK	07/23/13
REVIEWED	CAH/KNL	03/07/14

HANSON
Professional Services Inc. 2014
1525 South Sixth Street
Springfield, Illinois 62703-2986
Ph: (217) 788-2450 Fax: (217) 788-2503
www.hanson-inc.com
Offices Nationwide

REPLACE MRL AND
MITL SYSTEMS

EXISTING ELECTRICAL PLAN
RUNWAY 9-27 STA. 156+00
TO STA. 169+00

MAR 25, 2014 2:24 PM H:\GLO00382
pw:\sps-svc306\hanson\dom\hanson\Projects\Documents\13\jobs\13A0058\CAD\Airport\Sheet\C-141-ELE



LEGEND

	EXISTING PAVEMENT
	EXISTING ELECTRICAL DUCT
	EXISTING MARKING
	EXISTING ELECTRICAL CABLE/AIRFIELD LIGHTING CABLE
	EXISTING REIL CIRCUIT
	EXISTING PLASI CIRCUIT
	EXISTING UNDERDRAIN
	EXISTING UNDERDRAIN CLEANOUT
	EXISTING INLET
	EXISTING BASE MOUNTED RUNWAY LIGHT TO BE REMOVED
	EXISTING STAKE MOUNTED RUNWAY LIGHT TO BE REMOVED
	EXISTING STAKE MOUNTED THRESHOLD LIGHT TO BE REMOVED
	EXISTING BASE MOUNTED THRESHOLD LIGHT TO BE REMOVED
	EXISTING STAKE MOUNTED TAXIWAY LIGHT TO BE REMOVED
	EXISTING BASE MOUNTED TAXIWAY LIGHT TO BE REMOVED
	EXISTING TAXI GUIDANCE SIGN TO BE REMOVED
	EXISTING CABLE MARKER
	EXISTING DUCT MARKER
	EXISTING REILS
	EXISTING PLASI
	EXISTING SPLICE CAN
	EXISTING WIND CONE

NOTES

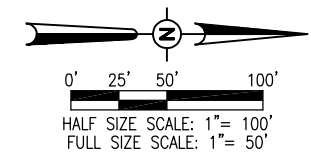
- BASED ON FIELD OBSERVATIONS THE EXISTING NAVAID CIRCUIT CONDUCTORS APPEAR TO BE AS FOLLOWS:
 - WIND CONE FEEDER CABLE (120VAC) IS 2 #8 AWG ROME XLP POWER CABLE 5KV NON SHIELDED FAA L-824-BLACK.
 - RUNWAY 9 PLASI FEEDER CABLE (120VAC) IS 1 #4 ROME CABLE XLP-USE-2, 600V BLACK AND 1 #4 ROME CABLE XLP-USE-2 600V WHITE NEUTRAL.
 - RUNWAY 27 PLASI FEEDER CABLE (120VAC) IS 1 #4 ROME CABLE XLP-USE-2, 600V BLACK AND 1 #4 ROME CABLE XLP-USE-2 600V WHITE NEUTRAL.
 - RUNWAY 27 REIL FEEDER CABLE (240VAC) IS 2 #4 ROME CABLE XLP-USE-2, 600V BLACK AND RED.
 - RUNWAY 9 REIL FEEDER CABLE (240VAC) IS 2 #4 ROME CABLE XLP-USE-2, 600V BLACK AND RED.
 - RUNWAY 17 REIL FEEDER CABLE (240VAC) IS 2 #4 XLP-USE-2, 600V BLACK AND RED.

NOTE:
REIL CKTS APPEAR TO INCLUDE A #4 WHITE XLP-USE. NOT CONFIRMED IF THIS IS A GROUND OR NEUTRAL. REILS DO NOT REQUIRE NEUTRAL.

BEACON FEEDER (120VAC) APPEARS TO BE 1 #8 USE BLACK, AND 1 #8 NEUTRAL (COLOR NOT CONFIRMED).

THE LOCATION, SIZE, AND TYPE OF MATERIAL OF EXISTING UNDERGROUND AND/OR ABOVEGROUND UTILITIES INDICATED ON THE PLANS ARE NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY WHATEVER IN RESPECT TO THE ACCURACY, COMPLETENESS, OR SUFFICIENCY OF THE INFORMATION. THERE IS NO GUARANTEE, EITHER EXPRESSED OR IMPLIED, THAT THE LOCATIONS, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND UTILITIES INDICATED ARE REPRESENTATIVE OF THOSE TO BE ENCOUNTERED IN THE CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ACTUAL LOCATION OF ALL SUCH FACILITIES, INCLUDING SERVICE CONNECTIONS TO UNDERGROUND UTILITIES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES OF HIS OPERATIONAL PLANS AND SHALL OBTAIN FROM THE RESPECTIVE UTILITY COMPANIES DETAILED INFORMATION AND ASSISTANCE RELATIVE TO THE LOCATION OF THEIR FACILITIES AND THE WORKING SCHEDULE OF THE COMPANIES FOR REMOVAL OR ADJUSTMENT WHERE REQUIRED. IN THE EVENT AN UNEXPECTED UTILITY INTERFERENCE IS ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY COMPANY OF JURISDICTION. THE OWNER'S REPRESENTATIVE AND/OR THE RESIDENT ENGINEER SHALL ALSO BE IMMEDIATELY NOTIFIED. ANY DAMAGE TO SUCH MAINS AND SERVICES SHALL BE RESTORED TO SERVICE AT ONCE AND PAID FOR BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CONTRACT.

ALL UTILITY CABLES AND LINES SHALL BE LOCATED BY THE RESPECTIVE UTILITY. **CONTACT JULIE (JOINT UTILITY LOCATION INFORMATION FOR EXCAVATORS) FOR UTILITY INFORMATION, PHONE: 1-800-892-0123.** CONTACT THE FAA (FEDERAL AVIATION ADMINISTRATION) FOR ASSISTANCE IN LOCATING FAA CABLES AND UTILITIES. LOCATION OF FAA POWER, CONTROL, AND COMMUNICATION CABLES SHALL BE COORDINATED WITH AND/OR LOCATED BY THE FAA. ALSO CONTACT AIRPORT DIRECTOR/MANAGER AND AIRPORT PERSONNEL FOR ASSISTANCE IN LOCATING UNDERGROUND AIRPORT CABLES AND/OR UTILITIES. ALSO COORDINATE WORK WITH ALL ABOVEGROUND UTILITIES.



REVISION	DATE

CRAWFORD COUNTY AIRPORT
ROBINSON
CRAWFORD COUNTY, ILLINOIS

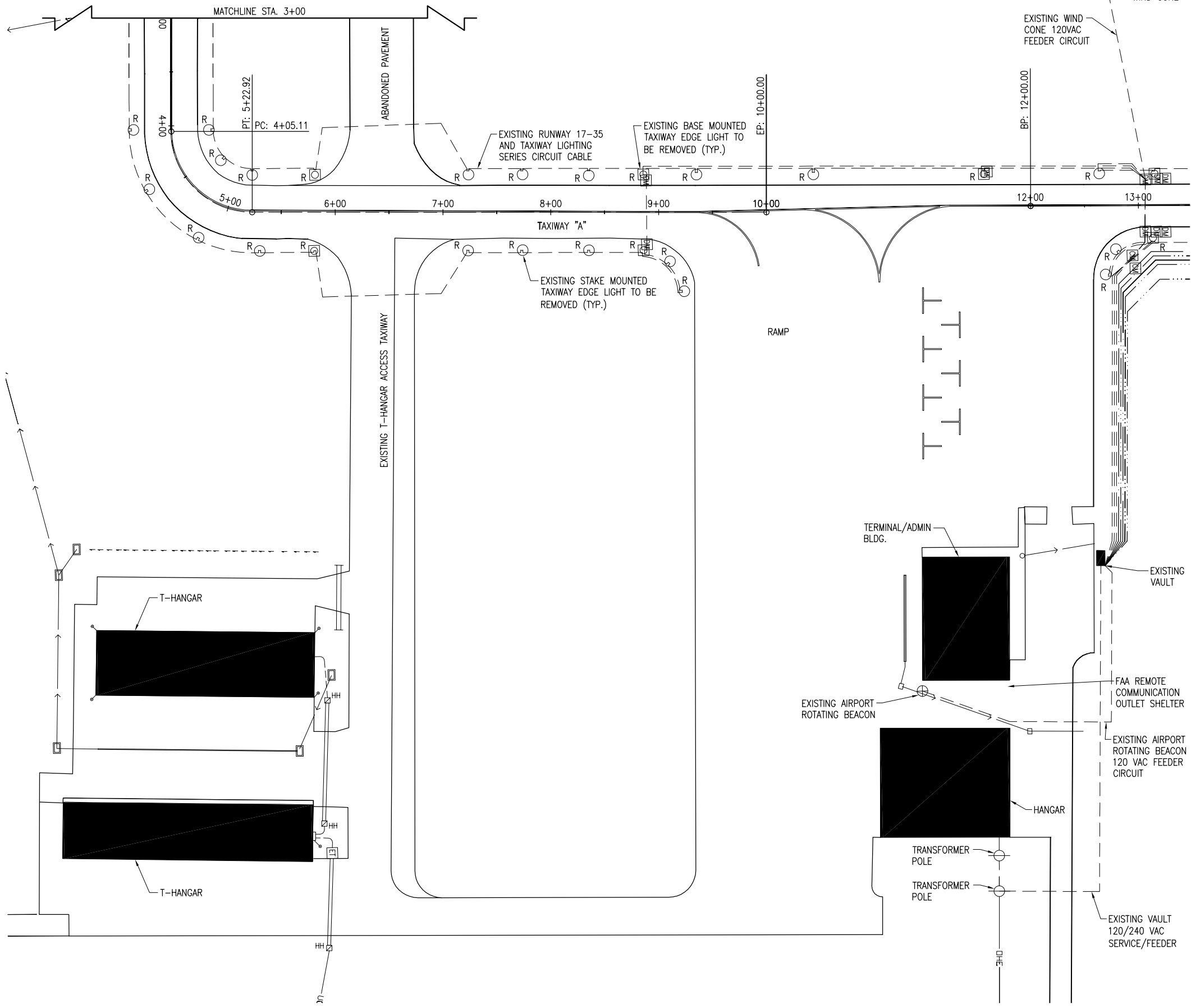
IL PROJ.: RSY-4334 S.B.C. PROJ.: 3-17-SBGP-XX

Hanson Proj. No. 13A0058	BAK	07/23/13
Filename: C-141-ELE.dwg	BAK	07/23/13
Scale 1" = 50'	BAK	07/23/13
Date 03/07/14	BAK	07/23/13
LAYOUT	CAH/KNL	03/07/14
DRAWN		
REVIEWED		

HANSON
Professional Services Inc. 2014
1525 South Sixth Street
Springfield, Illinois 62703-2986
Ph: (217) 788-2450 Fax: (217) 788-2503
www.hanson-inc.com
Offices Nationwide

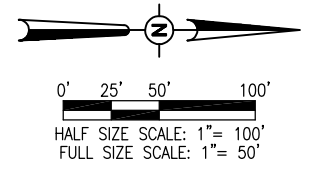
REPLACE MRL AND MITL SYSTEMS
EXISTING ELECTRICAL PLAN TAXIWAY A (NORTH)

MAR 25, 2014 1:11 PM H4GL000382
pw:\sps\svr306\hanson\dom\hanson\Projects\Documents\13\jobs\13A0058\CAD\Work\Sheet\C-141-ELE



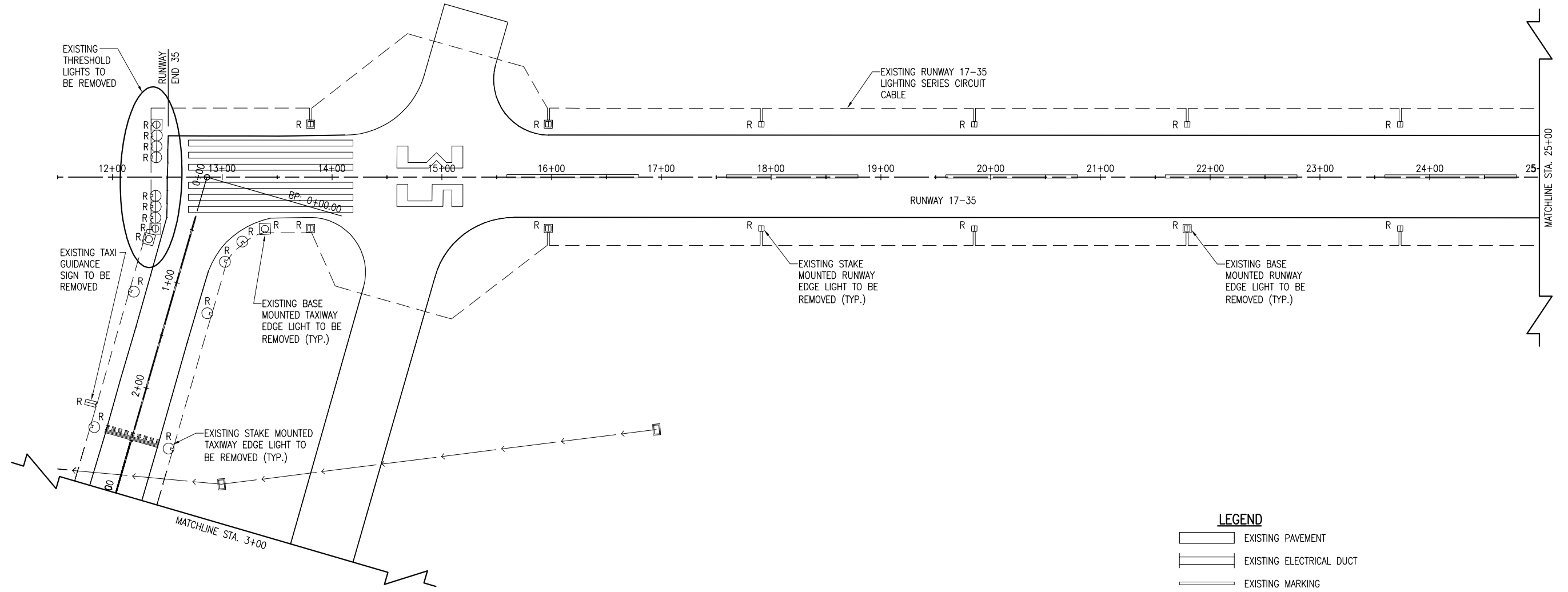
LEGEND

- EXISTING PAVEMENT
- EXISTING ELECTRICAL DUCT
- EXISTING MARKING
- EXISTING ELECTRICAL CABLE/AIRFIELD LIGHTING CABLE
- EXISTING REIL CIRCUIT
- EXISTING PLASI CIRCUIT
- EXISTING UNDERDRAIN
- EXISTING UNDERDRAIN CLEANOUT
- EXISTING STORM SEWER
- EXISTING INLET
- EXISTING BASE MOUNTED RUNWAY LIGHT TO BE REMOVED
- EXISTING STAKE MOUNTED RUNWAY LIGHT TO BE REMOVED
- EXISTING STAKE MOUNTED THRESHOLD LIGHT TO BE REMOVED
- EXISTING BASE MOUNTED THRESHOLD LIGHT TO BE REMOVED
- EXISTING STAKE MOUNTED TAXIWAY LIGHT TO BE REMOVED
- EXISTING BASE MOUNTED TAXIWAY LIGHT TO BE REMOVED
- EXISTING TAXI GUIDANCE SIGN TO BE REMOVED
- EXISTING CABLE MARKER
- EXISTING DUCT MARKER
- EXISTING REILS
- EXISTING PLASI
- EXISTING SPLICE CAN
- EXISTING WIND CONE



MAR 25, 2014 1:12 PM HAGL000382
 pw:\sps-sv306\hanson.dom\hanson Projects\Documents\13\lob\13A0058\13A0058D\CAD\Airport\Sheet\C-141-ELE

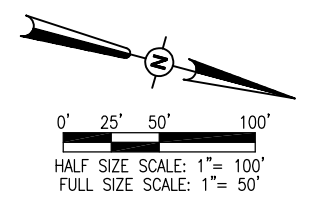
REVISION				
DATE				
CRAWFORD COUNTY AIRPORT ROBINSON CRAWFORD COUNTY, ILLINOIS				
IL. PROJ.: RSY-4334 S.B.C. PROJ.: 3-17-SBGP-XX				
Hanson Proj. No. 13A0058 Filename: C-141-ELE.dwg Scale 1" = 50' Date 03/07/14	LAYOUT BAK 07/23/13 DRAWN BAK 07/23/13 REVIEWED CAH/KNL 03/07/14	© Copyright Hanson Professional Services Inc. 2014 Hanson Professional Services Inc. 1525 South Sixth Street Springfield, Illinois 62703-2886 Ph: (217) 788-2450 Fax: (217) 788-2503 www.hanson-inc.com Offices Nationwide		
REPLACE MIRL AND MITL SYSTEMS		EXISTING ELECTRICAL PLAN TAXIWAY A (SOUTH)		
14				
14 of 48 sheets				



THE LOCATION, SIZE, AND TYPE OF MATERIAL OF EXISTING UNDERGROUND AND/OR ABOVEGROUND UTILITIES INDICATED ON THE PLANS ARE NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY WHATEVER IN RESPECT TO THE ACCURACY, COMPLETENESS, OR SUFFICIENCY OF THE INFORMATION. THERE IS NO GUARANTEE, EITHER EXPRESSED OR IMPLIED, THAT THE LOCATIONS, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND UTILITIES INDICATED ARE REPRESENTATIVE OF THOSE TO BE ENCOUNTERED IN THE CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ACTUAL LOCATION OF ALL SUCH FACILITIES, INCLUDING SERVICE CONNECTIONS TO UNDERGROUND UTILITIES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES OF HIS OPERATIONAL PLANS AND SHALL OBTAIN FROM THE RESPECTIVE UTILITY COMPANIES DETAILED INFORMATION AND ASSISTANCE RELATIVE TO THE LOCATION OF THEIR FACILITIES AND THE WORKING SCHEDULE OF THE COMPANIES FOR REMOVAL OR ADJUSTMENT WHERE REQUIRED. IN THE EVENT AN UNEXPECTED UTILITY INTERFERENCE IS ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY COMPANY OF JURISDICTION. THE OWNER'S REPRESENTATIVE AND/OR THE RESIDENT ENGINEER SHALL ALSO BE IMMEDIATELY NOTIFIED. ANY DAMAGE TO SUCH MAINS AND SERVICES SHALL BE RESTORED TO SERVICE AT ONCE AND PAID FOR BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CONTRACT.

ALL UTILITY CABLES AND LINES SHALL BE LOCATED BY THE RESPECTIVE UTILITY. **CONTACT JULIE (JOINT UTILITY LOCATION INFORMATION FOR EXCAVATORS) FOR UTILITY INFORMATION, PHONE: 1-800-892-0123.** CONTACT THE FAA (FEDERAL AVIATION ADMINISTRATION) FOR ASSISTANCE IN LOCATING FAA CABLES AND UTILITIES. LOCATION OF FAA POWER, CONTROL, AND COMMUNICATION CABLES SHALL BE COORDINATED WITH AND/OR LOCATED BY THE FAA. ALSO CONTACT AIRPORT DIRECTOR/MANAGER AND AIRPORT PERSONNEL FOR ASSISTANCE IN LOCATING UNDERGROUND AIRPORT CABLES AND/OR UTILITIES. ALSO COORDINATE WORK WITH ALL ABOVEGROUND UTILITIES.

- LEGEND**
- EXISTING PAVEMENT
 - EXISTING ELECTRICAL DUCT
 - EXISTING MARKING
 - EXISTING ELECTRICAL CABLE/AIRFIELD LIGHTING CABLE
 - EXISTING REIL CIRCUIT
 - EXISTING PLASI CIRCUIT
 - EXISTING UNDERDRAIN
 - EXISTING UNDERDRAIN CLEANOUT
 - EXISTING STORM SEWER
 - EXISTING INLET
 - EXISTING BASE MOUNTED RUNWAY LIGHT TO BE REMOVED
 - EXISTING STAKE MOUNTED RUNWAY LIGHT TO BE REMOVED
 - EXISTING STAKE MOUNTED THRESHOLD LIGHT TO BE REMOVED
 - EXISTING BASE MOUNTED THRESHOLD LIGHT TO BE REMOVED
 - EXISTING STAKE MOUNTED TAXIWAY LIGHT TO BE REMOVED
 - EXISTING BASE MOUNTED TAXIWAY LIGHT TO BE REMOVED
 - EXISTING TAXI GUIDANCE SIGN TO BE REMOVED
 - EXISTING CABLE MARKER
 - EXISTING DUCT MARKER
 - EXISTING REILS
 - EXISTING PLASI
 - EXISTING SPLICE CAN
 - EXISTING WIND CONE



DATE	REVISION

CRAWFORD COUNTY AIRPORT
ROBINSON
CRAWFORD COUNTY, ILLINOIS

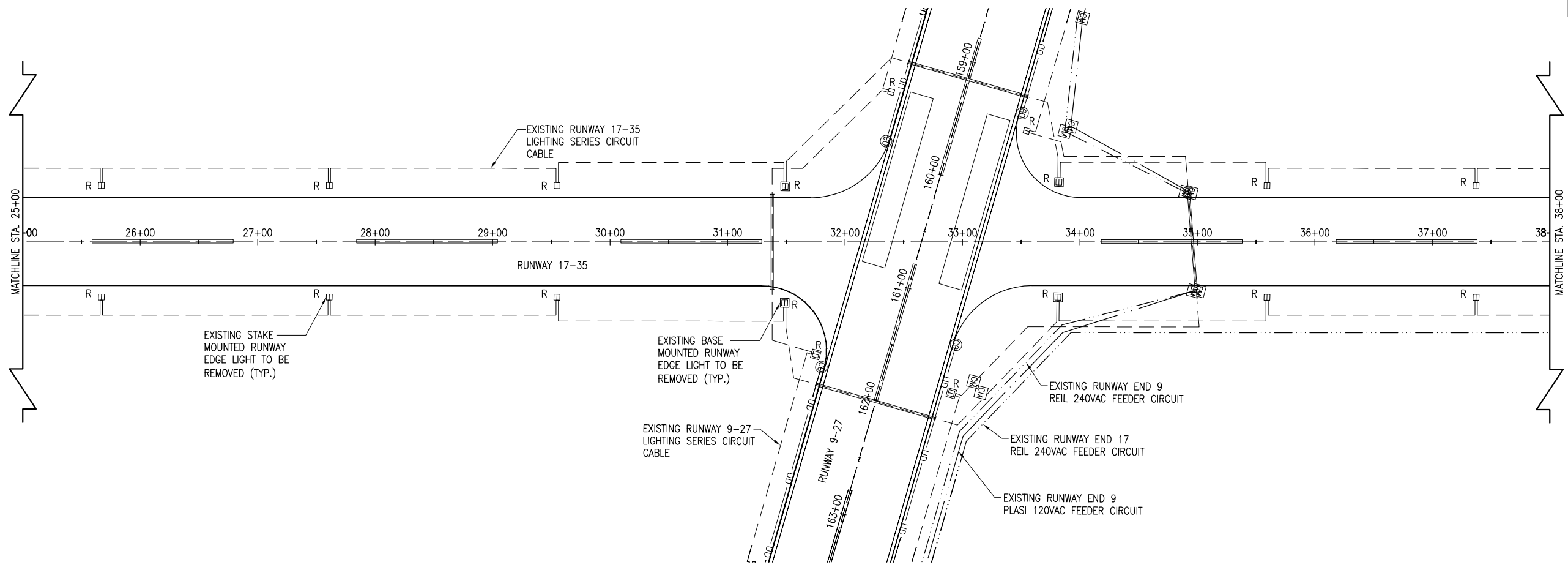
IL. PROJ.: RSY-4334 S.B.C. PROJ.: 3-17-SBGP-XX

Hanson Proj. No. 13A0058	BAK	07/23/13
Filename: C-141-ELE.dwg	BAK	07/23/13
Scale 1" = 50'	BAK	07/23/13
Date 03/07/14	REVIEWED	03/07/14
LAYOUT		
DRAWN		

HANSON
Professional Services Inc. 2014
1525 South Sixth Street
Springfield, Illinois 62703-2886
Ph: (217) 788-2450 Fax: (217) 788-2503
www.hanson-inc.com
Offices Nationwide

REPLACE MRL AND MITL SYSTEMS
EXISTING ELECTRICAL PLAN
RUNWAY 17-35 STA. 12+50
TO STA. 25+00

MAR 25, 2014 1:12 PM H:\GLO00382 p:\sps-svc206\hanson.dom\hanson_projects\Documents\13\jobs\13A0058\CAD\Airport\Sheet\C-141-ELE

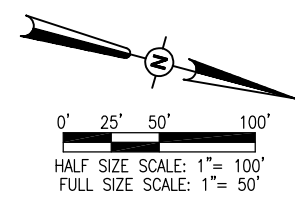


THE LOCATION, SIZE, AND TYPE OF MATERIAL OF EXISTING UNDERGROUND AND/OR ABOVEGROUND UTILITIES INDICATED ON THE PLANS ARE NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY WHATEVER IN RESPECT TO THE ACCURACY, COMPLETENESS, OR SUFFICIENCY OF THE INFORMATION. THERE IS NO GUARANTEE, EITHER EXPRESSED OR IMPLIED, THAT THE LOCATIONS, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND UTILITIES INDICATED ARE REPRESENTATIVE OF THOSE TO BE ENCOUNTERED IN THE CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ACTUAL LOCATION OF ALL SUCH FACILITIES, INCLUDING SERVICE CONNECTIONS TO UNDERGROUND UTILITIES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES OF HIS OPERATIONAL PLANS AND SHALL OBTAIN FROM THE RESPECTIVE UTILITY COMPANIES DETAILED INFORMATION AND ASSISTANCE RELATIVE TO THE LOCATION OF THEIR FACILITIES AND THE WORKING SCHEDULE OF THE COMPANIES FOR REMOVAL OR ADJUSTMENT WHERE REQUIRED. IN THE EVENT AN UNEXPECTED UTILITY INTERFERENCE IS ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY COMPANY OF JURISDICTION. THE OWNER'S REPRESENTATIVE AND/OR THE RESIDENT ENGINEER SHALL ALSO BE IMMEDIATELY NOTIFIED. ANY DAMAGE TO SUCH MAINS AND SERVICES SHALL BE RESTORED TO SERVICE AT ONCE AND PAID FOR BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CONTRACT.

ALL UTILITY CABLES AND LINES SHALL BE LOCATED BY THE RESPECTIVE UTILITY. **CONTACT JULIE (JOINT UTILITY LOCATION INFORMATION FOR EXCAVATORS) FOR UTILITY INFORMATION, PHONE: 1-800-892-0123.** CONTACT THE FAA (FEDERAL AVIATION ADMINISTRATION) FOR ASSISTANCE IN LOCATING FAA CABLES AND UTILITIES. LOCATION OF FAA POWER, CONTROL, AND COMMUNICATION CABLES SHALL BE COORDINATED WITH AND/OR LOCATED BY THE FAA. ALSO CONTACT AIRPORT DIRECTOR/MANAGER AND AIRPORT PERSONNEL FOR ASSISTANCE IN LOCATING UNDERGROUND AIRPORT CABLES AND/OR UTILITIES. ALSO COORDINATE WORK WITH ALL ABOVEGROUND UTILITIES.

LEGEND

- EXISTING PAVEMENT
- EXISTING ELECTRICAL DUCT
- EXISTING MARKING
- EXISTING ELECTRICAL CABLE/AIRFIELD LIGHTING CABLE
- EXISTING REIL CIRCUIT
- EXISTING PLASI CIRCUIT
- EXISTING UNDERDRAIN
- EXISTING UNDERDRAIN CLEANOUT
- EXISTING STORM SEWER
- EXISTING INLET
- EXISTING BASE MOUNTED RUNWAY LIGHT TO BE REMOVED
- EXISTING STAKE MOUNTED RUNWAY LIGHT TO BE REMOVED
- EXISTING STAKE MOUNTED THRESHOLD LIGHT TO BE REMOVED
- EXISTING BASE MOUNTED THRESHOLD LIGHT TO BE REMOVED
- EXISTING STAKE MOUNTED TAXIWAY LIGHT TO BE REMOVED
- EXISTING BASE MOUNTED TAXIWAY LIGHT TO BE REMOVED
- EXISTING TAXI GUIDANCE SIGN TO BE REMOVED
- EXISTING CABLE MARKER
- EXISTING DUCT MARKER
- EXISTING REILS
- EXISTING PLASI
- EXISTING SPLICE CAN
- EXISTING WIND CONE



DATE	REVISION

CRAWFORD COUNTY AIRPORT
ROBINSON
CRAWFORD COUNTY, ILLINOIS

IL. PROJ.: RSY-4334 S.B.C. PROJ.: 3-17-SBGP-XX

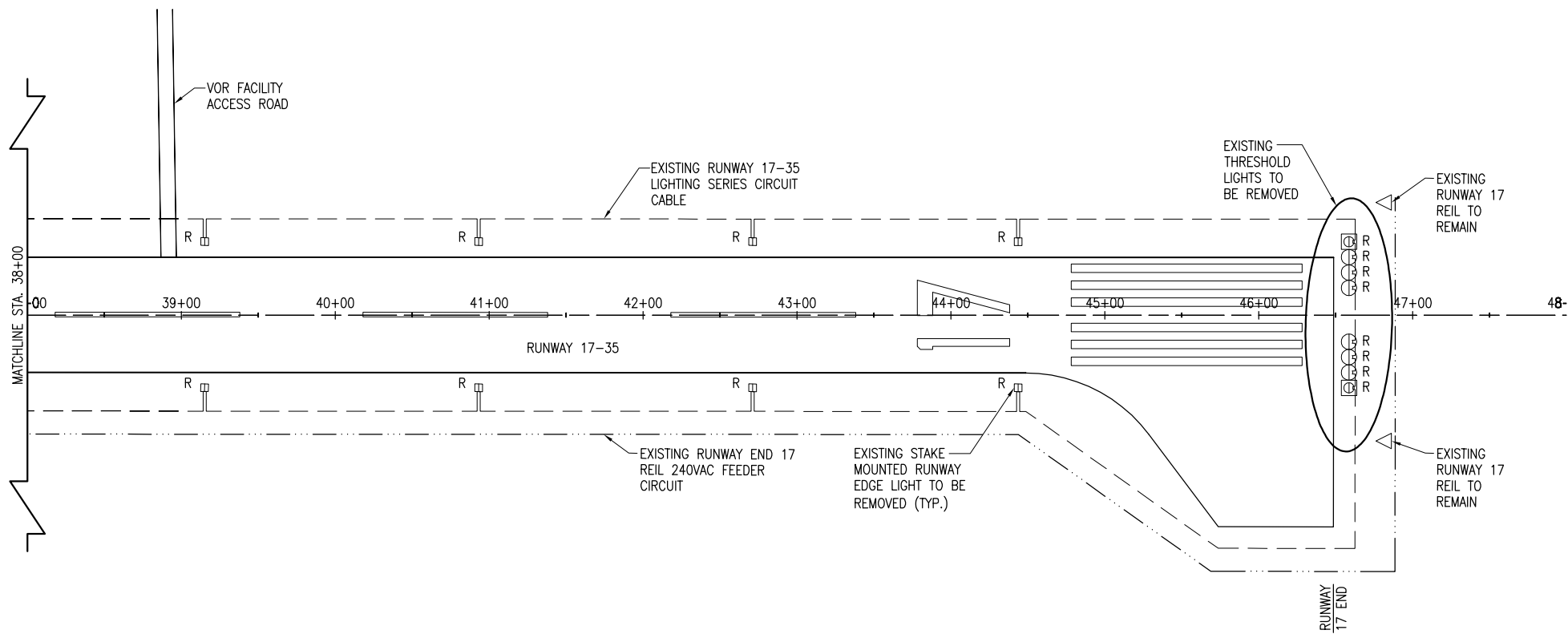
Hanson Proj. No. 13A0058	BAK	07/23/13
Filename: C-141-ELE.dwg	BAK	07/23/13
Scale 1" = 50'		
Date 03/07/14		
LAYOUT		
DRAWN		
REVIEWED		

HANSON
Professional Services Inc. 2014
1525 South Sixth Street
Springfield, Illinois 62703-2886
Ph: (217) 788-2450 Fax: (217) 788-2503
www.hanson-inc.com
Offices Nationwide

REPLACE MRL AND
MITL SYSTEMS

EXISTING ELECTRICAL PLAN
RUNWAY 17-35 STA. 25+00
TO STA. 38+00

MAR 25, 2014 1:13 PM H:\GLO00382
pw:\sps-svc306\hanson\dom\hanson\Projects\Documents\13\jobs\13A0058\CAD\Airport\Sheet\C-141-ELE

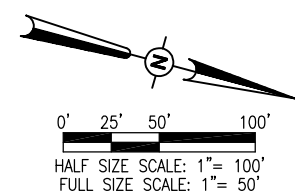


THE LOCATION, SIZE, AND TYPE OF MATERIAL OF EXISTING UNDERGROUND AND/OR ABOVEGROUND UTILITIES INDICATED ON THE PLANS ARE NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY WHATEVER IN RESPECT TO THE ACCURACY, COMPLETENESS, OR SUFFICIENCY OF THE INFORMATION. THERE IS NO GUARANTEE, EITHER EXPRESSED OR IMPLIED, THAT THE LOCATIONS, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND UTILITIES INDICATED ARE REPRESENTATIVE OF THOSE TO BE ENCOUNTERED IN THE CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ACTUAL LOCATION OF ALL SUCH FACILITIES, INCLUDING SERVICE CONNECTIONS TO UNDERGROUND UTILITIES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES OF HIS OPERATIONAL PLANS AND SHALL OBTAIN FROM THE RESPECTIVE UTILITY COMPANIES DETAILED INFORMATION AND ASSISTANCE RELATIVE TO THE LOCATION OF THEIR FACILITIES AND THE WORKING SCHEDULE OF THE COMPANIES FOR REMOVAL OR ADJUSTMENT WHERE REQUIRED. IN THE EVENT AN UNEXPECTED UTILITY INTERFERENCE IS ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY COMPANY OF JURISDICTION. THE OWNER'S REPRESENTATIVE AND/OR THE RESIDENT ENGINEER SHALL ALSO BE IMMEDIATELY NOTIFIED. ANY DAMAGE TO SUCH MAINS AND SERVICES SHALL BE RESTORED TO SERVICE AT ONCE AND PAID FOR BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CONTRACT.

ALL UTILITY CABLES AND LINES SHALL BE LOCATED BY THE RESPECTIVE UTILITY. **CONTACT JULIE (JOINT UTILITY LOCATION INFORMATION FOR EXCAVATORS) FOR UTILITY INFORMATION, PHONE: 1-800-892-0123.** CONTACT THE FAA (FEDERAL AVIATION ADMINISTRATION) FOR ASSISTANCE IN LOCATING FAA CABLES AND UTILITIES. LOCATION OF FAA POWER, CONTROL, AND COMMUNICATION CABLES SHALL BE COORDINATED WITH AND/OR LOCATED BY THE FAA. ALSO CONTACT AIRPORT DIRECTOR/MANAGER AND AIRPORT PERSONNEL FOR ASSISTANCE IN LOCATING UNDERGROUND AIRPORT CABLES AND/OR UTILITIES. ALSO COORDINATE WORK WITH ALL ABOVEGROUND UTILITIES.

LEGEND

- EXISTING PAVEMENT
- EXISTING ELECTRICAL DUCT
- EXISTING MARKING
- EXISTING ELECTRICAL CABLE/AIRFIELD LIGHTING CABLE
- EXISTING REIL CIRCUIT
- EXISTING PLASI CIRCUIT
- EXISTING UNDERDRAIN
- EXISTING UNDERDRAIN CLEANOUT
- EXISTING STORM SEWER
- EXISTING INLET
- EXISTING BASE MOUNTED RUNWAY LIGHT TO BE REMOVED
- EXISTING STAKE MOUNTED RUNWAY LIGHT TO BE REMOVED
- EXISTING STAKE MOUNTED THRESHOLD LIGHT TO BE REMOVED
- EXISTING BASE MOUNTED THRESHOLD LIGHT TO BE REMOVED
- EXISTING STAKE MOUNTED TAXIWAY LIGHT TO BE REMOVED
- EXISTING BASE MOUNTED TAXIWAY LIGHT TO BE REMOVED
- EXISTING TAXI GUIDANCE SIGN TO BE REMOVED
- EXISTING CABLE MARKER
- EXISTING DUCT MARKER
- EXISTING REILS
- EXISTING PLASI
- EXISTING SPLICE CAN
- EXISTING WIND CONE



MAR 25, 2014 1:14 PM H:\GLO00382 pw:\sps-svr306\hanson.dom\hanson_projects\Documents\13\jobs\13A0058\13A0058D\CAD\Airport\Sheet\C-141-ELE

REVISION	DATE

CRAWFORD COUNTY AIRPORT
ROBINSON
CRAWFORD COUNTY, ILLINOIS

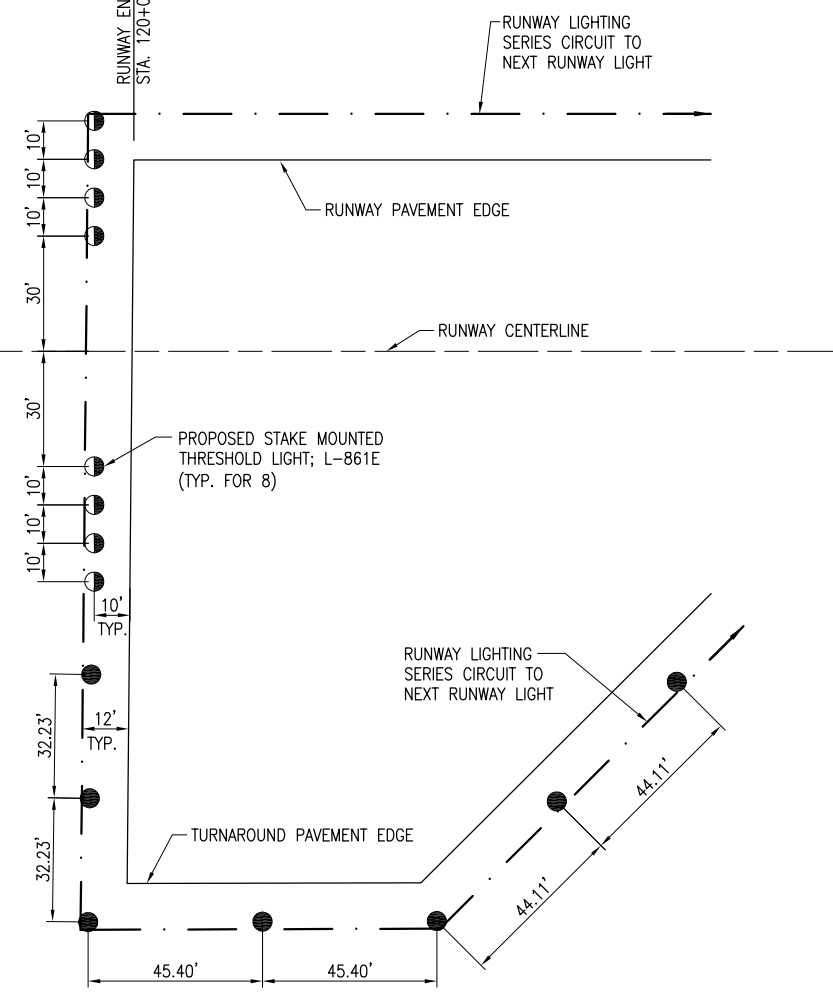
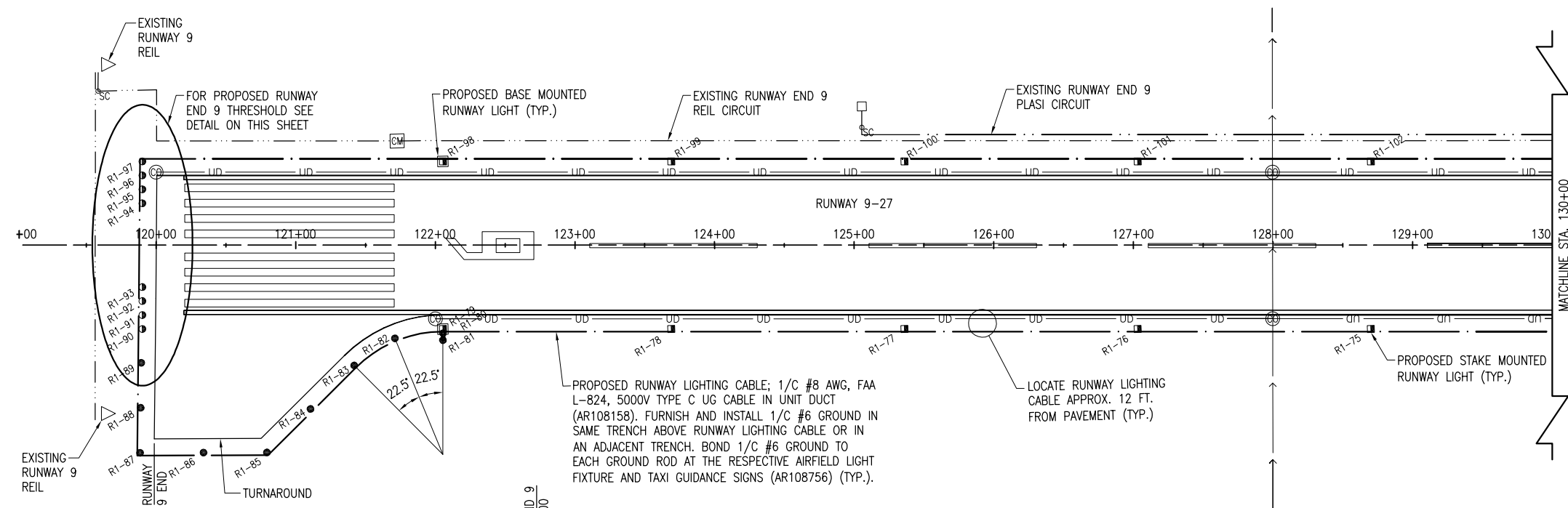
IL. PROJ.: RSY-4334 S.B.C. PROJ.: 3-17-SBGP-XX

Hanson Proj. No. 13A0058	BAK	07/23/13
Filename C-141-ELE.dwg	BAK	07/23/13
Scale 1" = 50'	BAK	07/23/13
Date 03/07/14	BAK	07/23/13
LAYOUT	CAH/KNL	03/07/14
DRAWN		
REVIEWED		

HANSON
Professional Services Inc. 2014
1525 South Sixth Street
Springfield, Illinois 62703-2886
Ph: (217) 788-2450 Fax: (217) 788-2503
www.hanson-inc.com
Offices Nationwide

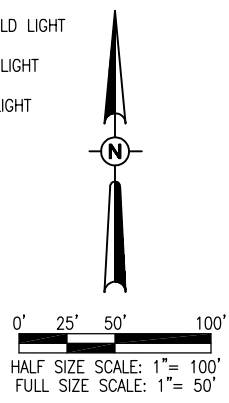
REPLACE MRL AND MITL SYSTEMS

EXISTING ELECTRICAL PLAN
RUNWAY 17-35 STA. 38+00
TO STA. 48+00



PROPOSED RUNWAY END 9 THRESHOLD DETAIL
"NOT TO SCALE"

- LEGEND**
- EXISTING PAVEMENT
 - EXISTING ELECTRICAL DUCT
 - PROPOSED ELECTRICAL DUCT
 - EXISTING MARKING
 - PROPOSED 1/C #8 AWG, FAA L-824, 5000 VOLT TYPE C UNDERGROUND CABLE IN UNIT DUCT
 - PROPOSED 2-1/C #8 AWG, FAA L-824, 5000 VOLT TYPE C UNDERGROUND CABLE IN UNIT DUCT
 - EXISTING REIL CIRCUIT
 - EXISTING PLASI CIRCUIT
 - EXISTING UNDERDRAIN
 - EXISTING UNDERDRAIN CLEANOUT
 - EXISTING STORM SEWER
 - EXISTING INLET
 - PROPOSED STAKE MOUNTED RUNWAY LIGHT
 - PROPOSED BASE MOUNTED RUNWAY LIGHT
 - PROPOSED STAKE MOUNTED THRESHOLD LIGHT
 - PROPOSED STAKE MOUNTED TAXIWAY LIGHT
 - PROPOSED BASE MOUNTED TAXIWAY LIGHT
 - PROPOSED TAXI GUIDANCE SIGN
 - EXISTING CABLE MARKER
 - EXISTING DUCT MARKER
 - EXISTING REILS
 - EXISTING PLASI
 - EXISTING SPLICE CAN
 - EXISTING WIND CONE



THE LOCATION, SIZE, AND TYPE OF MATERIAL OF EXISTING UNDERGROUND AND/OR ABOVEGROUND UTILITIES INDICATED ON THE PLANS ARE NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY WHATEVER IN RESPECT TO THE ACCURACY, COMPLETENESS, OR SUFFICIENCY OF THE INFORMATION. THERE IS NO GUARANTEE, EITHER EXPRESSED OR IMPLIED, THAT THE LOCATIONS, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND UTILITIES INDICATED ARE REPRESENTATIVE OF THOSE TO BE ENCOUNTERED IN THE CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ACTUAL LOCATION OF ALL SUCH FACILITIES, INCLUDING SERVICE CONNECTIONS TO UNDERGROUND UTILITIES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES OF HIS OPERATIONAL PLANS AND SHALL OBTAIN FROM THE RESPECTIVE UTILITY COMPANIES DETAILED INFORMATION AND ASSISTANCE RELATIVE TO THE LOCATION OF THEIR FACILITIES AND THE WORKING SCHEDULE OF THE COMPANIES FOR REMOVAL OR ADJUSTMENT WHERE REQUIRED. IN THE EVENT AN UNEXPECTED UTILITY INTERFERENCE IS ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY COMPANY OF JURISDICTION. THE OWNER'S REPRESENTATIVE AND/OR THE RESIDENT ENGINEER SHALL ALSO BE IMMEDIATELY NOTIFIED. ANY DAMAGE TO SUCH MAINS AND SERVICES SHALL BE RESTORED TO SERVICE AT ONCE AND PAID FOR BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CONTRACT.

ALL UTILITY CABLES AND LINES SHALL BE LOCATED BY THE RESPECTIVE UTILITY. **CONTACT JULIE (JOINT UTILITY LOCATION INFORMATION FOR EXCAVATORS) FOR UTILITY INFORMATION, PHONE: 1-800-892-0123.** CONTACT THE FAA (FEDERAL AVIATION ADMINISTRATION) FOR ASSISTANCE IN LOCATING FAA CABLES AND UTILITIES. LOCATION OF FAA POWER, CONTROL, AND COMMUNICATION CABLES SHALL BE COORDINATED WITH AND/OR LOCATED BY THE FAA. ALSO CONTACT AIRPORT DIRECTOR/MANAGER AND AIRPORT PERSONNEL FOR ASSISTANCE IN LOCATING UNDERGROUND AIRPORT CABLES AND/OR UTILITIES. ALSO COORDINATE WORK WITH ALL ABOVEGROUND UTILITIES.

MAR 25, 2014 2:42 PM H:\GLO00382 pw:\sps-svc306\hanson.dom\hanson_projects\Documents\13\jobs\13A0058\13A0058D\CAD\Airport\Sheet\C-142-ELE

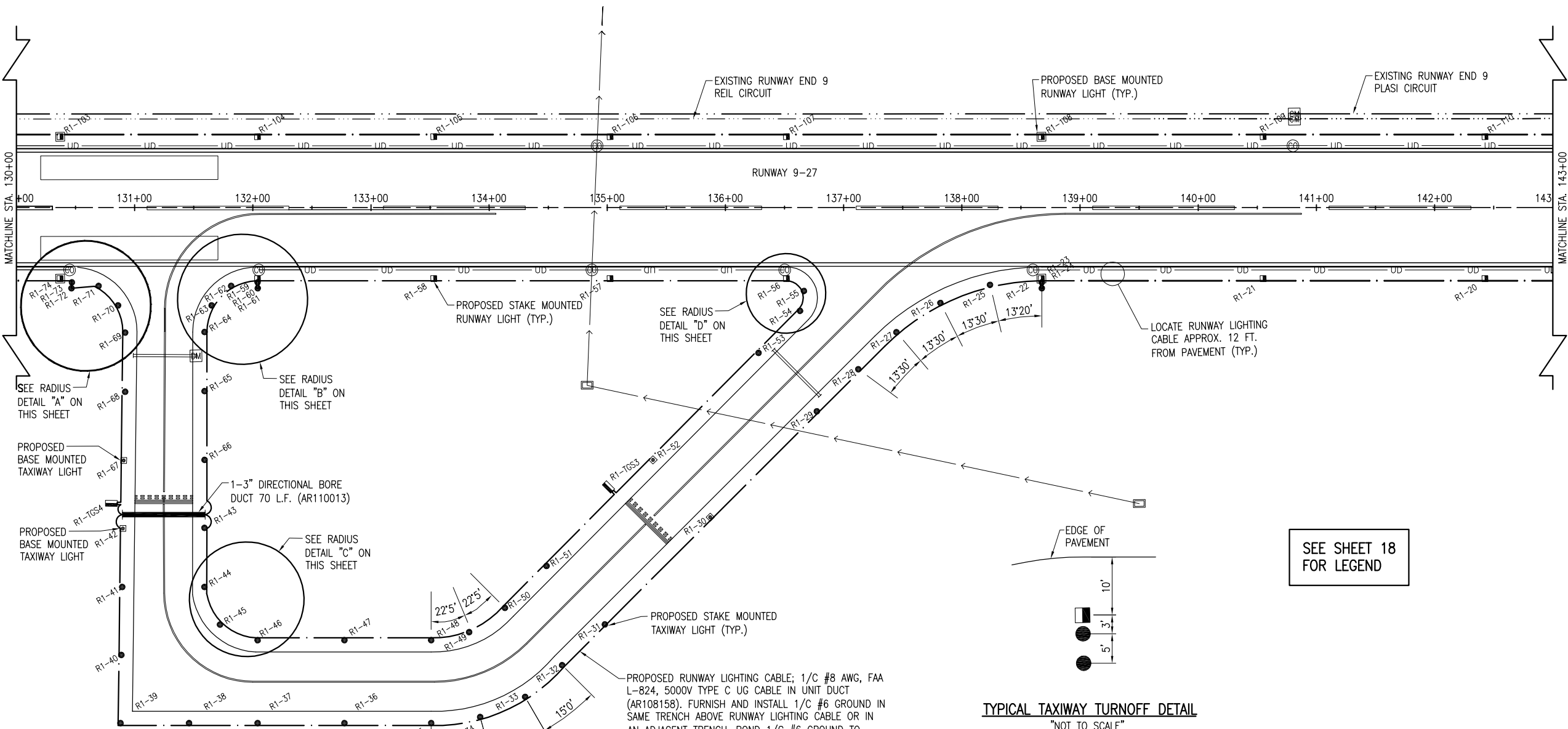
REVISION	DATE

CRAWFORD COUNTY AIRPORT
ROBINSON
CRAWFORD COUNTY, ILLINOIS
S.B.C. PROJ.: 3-17-SBGP-XX
IL PROJ.: RSY-4334

Hanson Proj. No. 13A0058	BAK	07/23/13
Filename C-142-ELE.dwg	BAK	07/23/13
Scale 1" = 50'		
Date 03/07/14		
LAYOUT		
DRAWN		
REVIEWED		

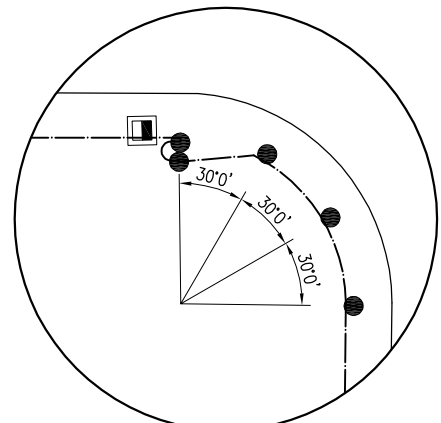
HANSON
Professional Services Inc. 2014
1525 South Sixth Street
Springfield, Illinois 62703-2986
Ph: (217) 788-2450 Fax: (217) 788-2503
www.hanson-inc.com
Offices Nationwide

REPLACE MRL AND MITL SYSTEMS
PROPOSED ELECTRICAL PLAN
RUNWAY 9-27 STA. 119+00 TO STA. 130+00

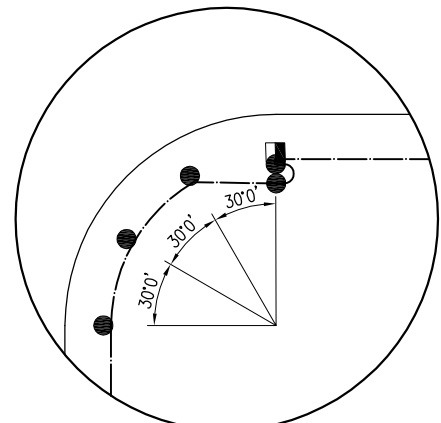


SEE SHEET 18 FOR LEGEND

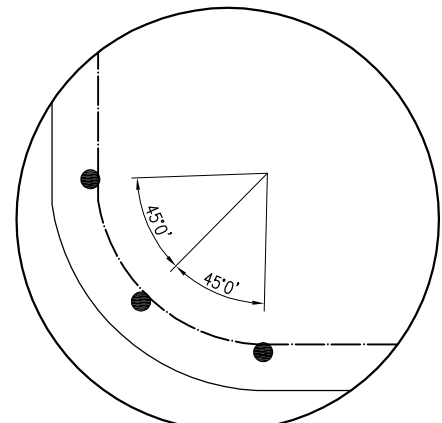
TYPICAL TAXIWAY TURNOFF DETAIL
"NOT TO SCALE"



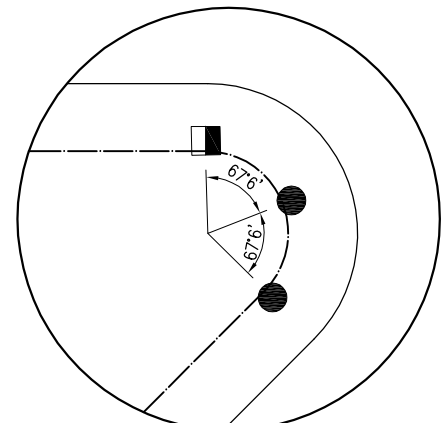
RADIUS DETAIL "A"
"NOT TO SCALE"



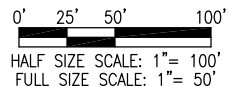
RADIUS DETAIL "B"
"NOT TO SCALE"



RADIUS DETAIL "C"
"NOT TO SCALE"



RADIUS DETAIL "D"
"NOT TO SCALE"



THE LOCATION, SIZE, AND TYPE OF MATERIAL OF EXISTING UNDERGROUND AND/OR ABOVEGROUND UTILITIES INDICATED ON THE PLANS ARE NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY WHATEVER IN RESPECT TO THE ACCURACY, COMPLETENESS, OR SUFFICIENCY OF THE INFORMATION. THERE IS NO GUARANTEE, EITHER EXPRESSED OR IMPLIED, THAT THE LOCATIONS, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND UTILITIES INDICATED ARE REPRESENTATIVE OF THOSE TO BE ENCOUNTERED IN THE CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ACTUAL LOCATION OF ALL SUCH FACILITIES, INCLUDING SERVICE CONNECTIONS TO UNDERGROUND UTILITIES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES OF HIS OPERATIONAL PLANS AND SHALL OBTAIN FROM THE RESPECTIVE UTILITY COMPANIES DETAILED INFORMATION AND ASSISTANCE RELATIVE TO THE LOCATION OF THEIR FACILITIES AND THE WORKING SCHEDULE OF THE COMPANIES FOR REMOVAL OR ADJUSTMENT WHERE REQUIRED. IN THE EVENT AN UNEXPECTED UTILITY INTERFERENCE IS ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY COMPANY OF JURISDICTION. THE OWNER'S REPRESENTATIVE AND/OR THE RESIDENT ENGINEER SHALL ALSO BE IMMEDIATELY NOTIFIED. ANY DAMAGE TO SUCH MAINS AND SERVICES SHALL BE RESTORED TO SERVICE AT ONCE AND PAID FOR BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CONTRACT.

ALL UTILITY CABLES AND LINES SHALL BE LOCATED BY THE RESPECTIVE UTILITY. CONTACT JULIE (JOINT UTILITY LOCATION INFORMATION FOR EXCAVATORS) FOR UTILITY INFORMATION, PHONE: 1-800-892-0123. CONTACT THE FAA (FEDERAL AVIATION ADMINISTRATION) FOR ASSISTANCE IN LOCATING FAA CABLES AND UTILITIES. LOCATION OF FAA POWER, CONTROL, AND COMMUNICATION CABLES SHALL BE COORDINATED WITH AND/OR LOCATED BY THE FAA. ALSO CONTACT AIRPORT DIRECTOR/MANAGER AND AIRPORT PERSONNEL FOR ASSISTANCE IN LOCATING UNDERGROUND AIRPORT CABLES AND/OR UTILITIES. ALSO COORDINATE WORK WITH ALL ABOVEGROUND UTILITIES.

APR 02, 2014 9:15 AM HAGL000382
 p:\s\sg\svr306\hanson\dom\hanson\Projects\Documents\130\130058\130058D\CAD\Airport\Sheet\C-142-ELE

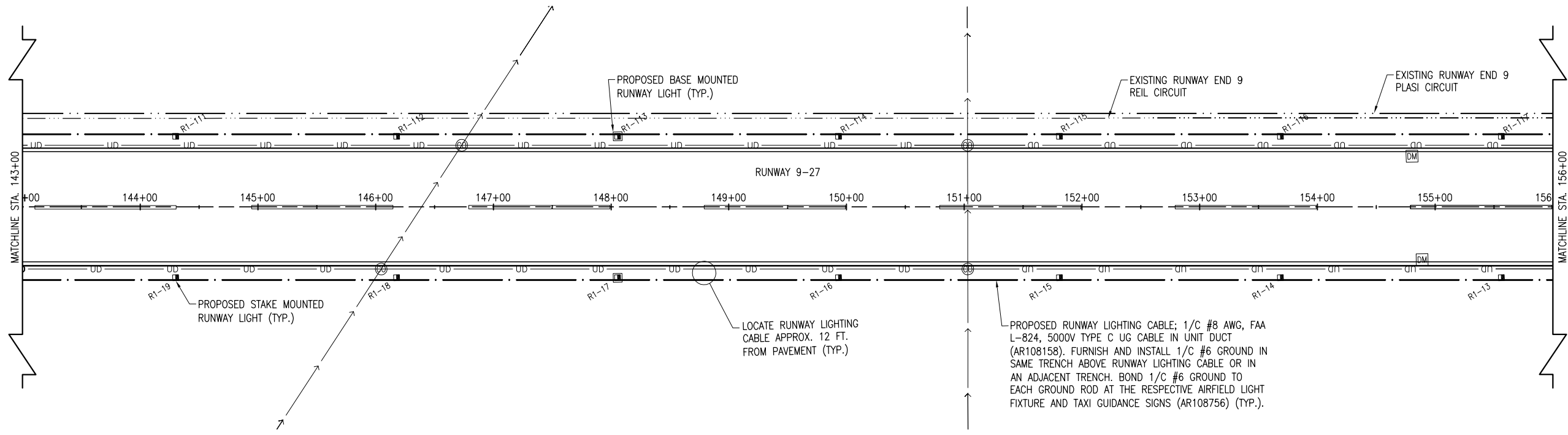
REVISION	DATE

CRAWFORD COUNTY AIRPORT
 ROBINSON
 CRAWFORD COUNTY, ILLINOIS
 ILL. PROJ.: RSY-4334 S.B.C. PROJ.: 3-17-SBGP-XX

Hanson Proj. No. 1300058	BAK	07/23/13
Filename: C-142-ELE.dwg	BAK	07/23/13
Scale 1" = 50'	BAK	07/23/13
Date 03/07/14	REVIEWED	CAH/KNL 03/07/14

HANSON
 Professional Services Inc. 2014
 Hanson Professional Services Inc.
 1525 South Sixth Street
 Springfield, Illinois 62703-2986
 Ph: (217) 788-2450 Fax: (217) 788-2503
 www.hanson-inc.com
 Offices Nationwide

REPLACE MRL AND MITL SYSTEMS
 PROPOSED ELECTRICAL PLAN
 RUNWAY 9-27 STA. 130+00 TO STA. 143+00

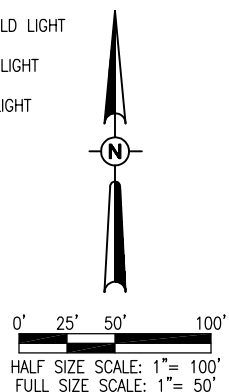


LEGEND

- EXISTING PAVEMENT
- EXISTING ELECTRICAL DUCT
- PROPOSED ELECTRICAL DUCT
- EXISTING MARKING
- PROPOSED 1/C #8 AWG, FAA L-824, 5000 VOLT TYPE C UNDERGROUND CABLE IN UNIT DUCT
- PROPOSED 2-1/C #8 AWG FAA L-824, 5000 VOLT TYPE C UNDERGROUND CABLE IN UNIT DUCT
- EXISTING REIL CIRCUIT
- EXISTING PLASI CIRCUIT
- EXISTING UNDERDRAIN
- EXISTING UNDERDRAIN CLEANOUT
- EXISTING STORM SEWER
- EXISTING INLET
- PROPOSED STAKE MOUNTED RUNWAY LIGHT
- PROPOSED BASE MOUNTED RUNWAY LIGHT
- PROPOSED STAKE MOUNTED THRESHOLD LIGHT
- PROPOSED STAKE MOUNTED TAXIWAY LIGHT
- PROPOSED BASE MOUNTED TAXIWAY LIGHT
- PROPOSED TAXI GUIDANCE SIGN
- EXISTING CABLE MARKER
- EXISTING DUCT MARKER
- EXISTING REILS
- EXISTING PLASI
- EXISTING SPLICE CAN
- EXISTING WIND CONE

THE LOCATION, SIZE, AND TYPE OF MATERIAL OF EXISTING UNDERGROUND AND/OR ABOVEGROUND UTILITIES INDICATED ON THE PLANS ARE NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY WHATEVER IN RESPECT TO THE ACCURACY, COMPLETENESS, OR SUFFICIENCY OF THE INFORMATION. THERE IS NO GUARANTEE, EITHER EXPRESSED OR IMPLIED, THAT THE LOCATIONS, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND UTILITIES INDICATED ARE REPRESENTATIVE OF THOSE TO BE ENCOUNTERED IN THE CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ACTUAL LOCATION OF ALL SUCH FACILITIES, INCLUDING SERVICE CONNECTIONS TO UNDERGROUND UTILITIES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES OF HIS OPERATIONAL PLANS AND SHALL OBTAIN FROM THE RESPECTIVE UTILITY COMPANIES DETAILED INFORMATION AND ASSISTANCE RELATIVE TO THE LOCATION OF THEIR FACILITIES AND THE WORKING SCHEDULE OF THE COMPANIES FOR REMOVAL OR ADJUSTMENT WHERE REQUIRED. IN THE EVENT AN UNEXPECTED UTILITY INTERFERENCE IS ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY COMPANY OF JURISDICTION. THE OWNER'S REPRESENTATIVE AND/OR THE RESIDENT ENGINEER SHALL ALSO BE IMMEDIATELY NOTIFIED. ANY DAMAGE TO SUCH MAINS AND SERVICES SHALL BE RESTORED TO SERVICE AT ONCE AND PAID FOR BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CONTRACT.

ALL UTILITY CABLES AND LINES SHALL BE LOCATED BY THE RESPECTIVE UTILITY. **CONTACT JULIE (JOINT UTILITY LOCATION INFORMATION FOR EXCAVATORS) FOR UTILITY INFORMATION, PHONE: 1-800-892-0123.** CONTACT THE FAA (FEDERAL AVIATION ADMINISTRATION) FOR ASSISTANCE IN LOCATING FAA CABLES AND UTILITIES. LOCATION OF FAA POWER, CONTROL, AND COMMUNICATION CABLES SHALL BE COORDINATED WITH AND/OR LOCATED BY THE FAA. ALSO CONTACT AIRPORT DIRECTOR/MANAGER AND AIRPORT PERSONNEL FOR ASSISTANCE IN LOCATING UNDERGROUND AIRPORT CABLES AND/OR UTILITIES. ALSO COORDINATE WORK WITH ALL ABOVEGROUND UTILITIES.



REVISION	DATE

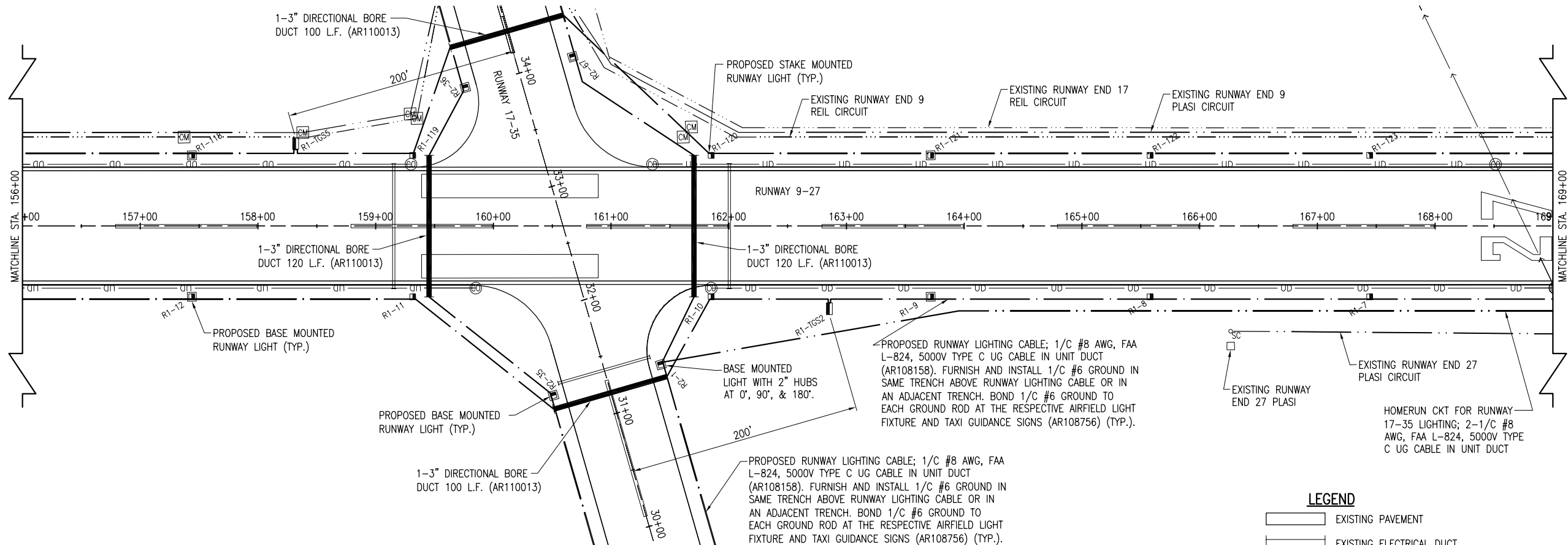
CRAWFORD COUNTY AIRPORT
ROBINSON
CRAWFORD COUNTY, ILLINOIS
IL. PROJ.: RSY-4334 S.B.C. PROJ.: 3-17-SBGP-XX

Hanson Proj. No. 13A0058	07/23/13
Filename C-142-ELE.dwg	BAK
Scale 1" = 50'	BAK
Date 03/07/14	BAK
LAYOUT	03/07/14
DRAWN	07/23/13
REVIEWED	03/07/14

HANSON
Professional Services Inc. 2014
1525 South Sixth Street
Springfield, Illinois 62703-2986
Ph: (217) 788-2450 Fax: (217) 788-2503
www.hanson-inc.com
Offices Nationwide

REPLACE MRL AND MITL SYSTEMS
PROPOSED ELECTRICAL PLAN
RUNWAY 9-27 STA. 143+00 TO STA. 156+00

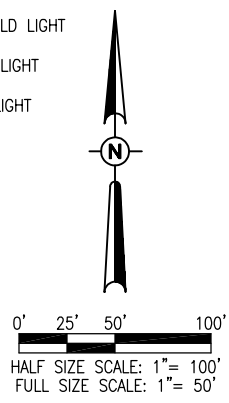
MAR 25, 2014 2:43 PM H:\GLO00382
p:\sps-svc306\hanson\dom\hanson\Projects\Documents\13\jobs\13A0058\CAD\Airport\Sheet\C-142-ELE



- LEGEND**
- EXISTING PAVEMENT
 - EXISTING ELECTRICAL DUCT
 - PROPOSED ELECTRICAL DUCT
 - EXISTING MARKING
 - PROPOSED 1/C #8 AWG, FAA L-824, 5000 VOLT TYPE C UNDERGROUND CABLE IN UNIT DUCT
 - PROPOSED 2-1/C #8 AWG FAA L-824, 5000 VOLT TYPE C UNDERGROUND CABLE IN UNIT DUCT
 - EXISTING REIL CIRCUIT
 - EXISTING PLASI CIRCUIT
 - EXISTING UNDERDRAIN
 - EXISTING UNDERDRAIN CLEANOUT
 - EXISTING STORM SEWER
 - EXISTING INLET
 - PROPOSED STAKE MOUNTED RUNWAY LIGHT
 - PROPOSED BASE MOUNTED RUNWAY LIGHT
 - PROPOSED STAKE MOUNTED THRESHOLD LIGHT
 - PROPOSED STAKE MOUNTED TAXIWAY LIGHT
 - PROPOSED BASE MOUNTED TAXIWAY LIGHT
 - PROPOSED TAXI GUIDANCE SIGN
 - EXISTING CABLE MARKER
 - EXISTING DUCT MARKER
 - EXISTING REILS
 - EXISTING PLASI
 - EXISTING SPLICE CAN
 - EXISTING WIND CONE

THE LOCATION, SIZE, AND TYPE OF MATERIAL OF EXISTING UNDERGROUND AND/OR ABOVEGROUND UTILITIES INDICATED ON THE PLANS ARE NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY WHATEVER IN RESPECT TO THE ACCURACY, COMPLETENESS, OR SUFFICIENCY OF THE INFORMATION. THERE IS NO GUARANTEE, EITHER EXPRESSED OR IMPLIED, THAT THE LOCATIONS, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND UTILITIES INDICATED ARE REPRESENTATIVE OF THOSE TO BE ENCOUNTERED IN THE CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ACTUAL LOCATION OF ALL SUCH FACILITIES, INCLUDING SERVICE CONNECTIONS TO UNDERGROUND UTILITIES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES OF HIS OPERATIONAL PLANS AND SHALL OBTAIN FROM THE RESPECTIVE UTILITY COMPANIES DETAILED INFORMATION AND ASSISTANCE RELATIVE TO THE LOCATION OF THEIR FACILITIES AND THE WORKING SCHEDULE OF THE COMPANIES FOR REMOVAL OR ADJUSTMENT WHERE REQUIRED. IN THE EVENT AN UNEXPECTED UTILITY INTERFERENCE IS ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY COMPANY OF JURISDICTION. THE OWNER'S REPRESENTATIVE AND/OR THE RESIDENT ENGINEER SHALL ALSO BE IMMEDIATELY NOTIFIED. ANY DAMAGE TO SUCH MAINS AND SERVICES SHALL BE RESTORED TO SERVICE AT ONCE AND PAID FOR BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CONTRACT.

ALL UTILITY CABLES AND LINES SHALL BE LOCATED BY THE RESPECTIVE UTILITY. **CONTACT JULIE (JOINT UTILITY LOCATION INFORMATION FOR EXCAVATORS) FOR UTILITY INFORMATION, PHONE: 1-800-892-0123.** CONTACT THE FAA (FEDERAL AVIATION ADMINISTRATION) FOR ASSISTANCE IN LOCATING FAA CABLES AND UTILITIES. LOCATION OF FAA POWER, CONTROL, AND COMMUNICATION CABLES SHALL BE COORDINATED WITH AND/OR LOCATED BY THE FAA. ALSO CONTACT AIRPORT DIRECTOR/MANAGER AND AIRPORT PERSONNEL FOR ASSISTANCE IN LOCATING UNDERGROUND AIRPORT CABLES AND/OR UTILITIES. ALSO COORDINATE WORK WITH ALL ABOVEGROUND UTILITIES.



REVISION	DATE

CRAWFORD COUNTY AIRPORT
ROBINSON
CRAWFORD COUNTY, ILLINOIS

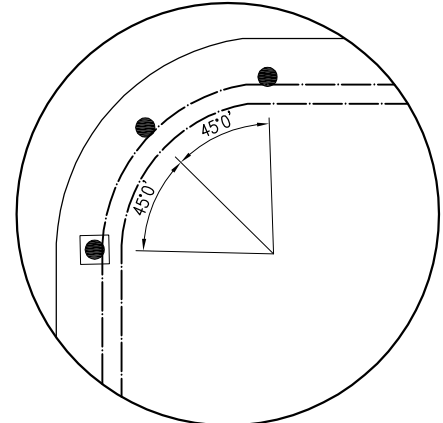
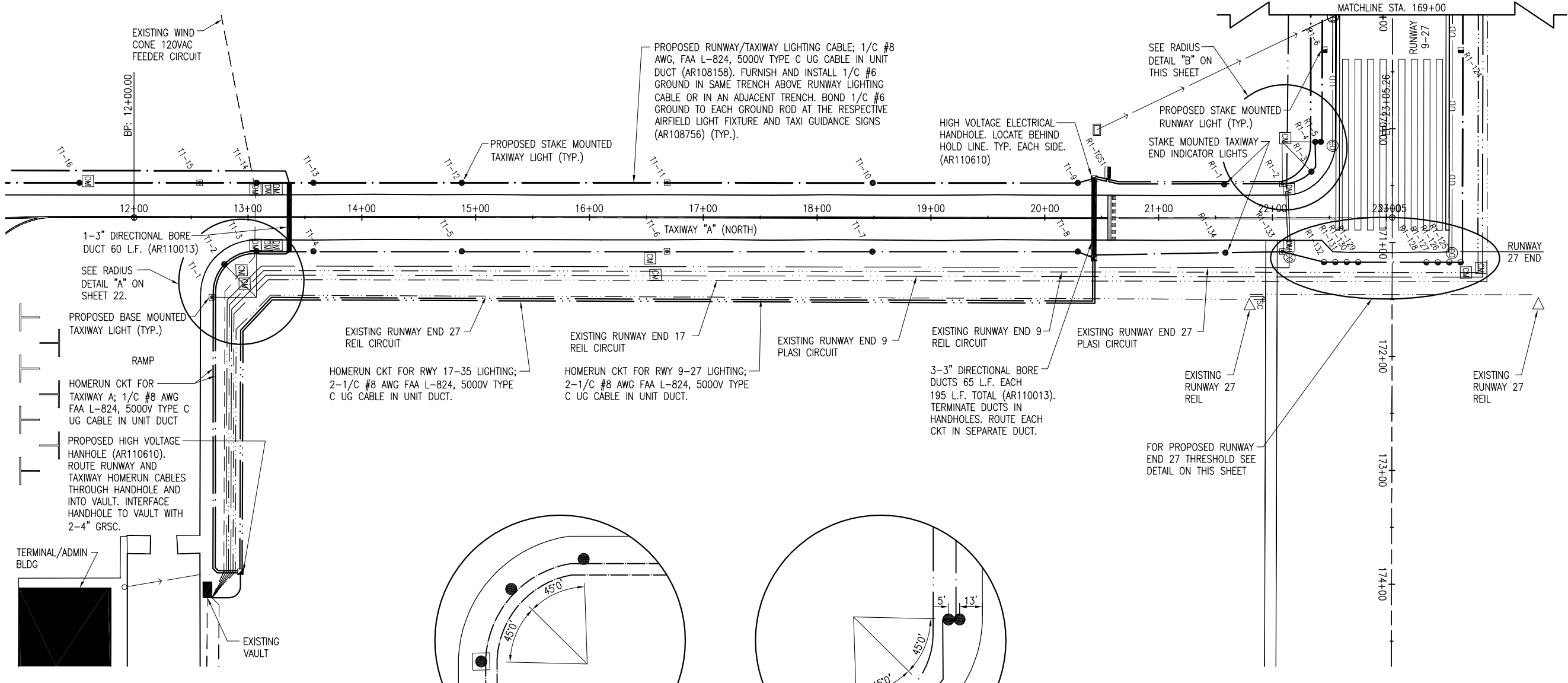
IL. PROJ.: RSY-4334 S.B.C. PROJ.: 3-17-SBGP-XX

Hanson Proj. No. 13A0058	BAK	07/23/13
Filename C-142-ELE.dwg	BAK	07/23/13
Scale 1" = 50'	BAK	07/23/13
Date 03/07/14	BAK	07/23/13
LAYOUT	BAK	07/23/13
DRAWN	BAK	07/23/13
REVIEWED	CAH/KNL	03/07/14

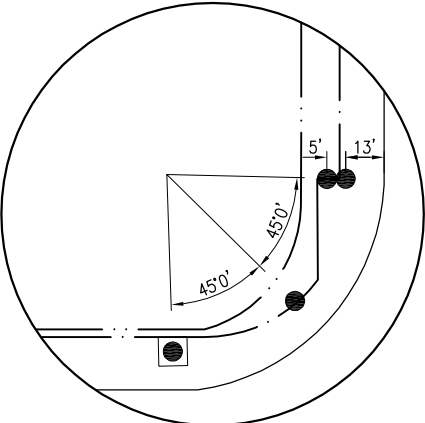
HANSON
Professional Services Inc. 2014
1525 South Sixth Street
Springfield, Illinois 62703-2986
Ph: (217) 788-2450 Fax: (217) 788-2503
www.hanson-inc.com
Offices Nationwide

REPLACE MRL AND MITL SYSTEMS
PROPOSED ELECTRICAL PLAN
RUNWAY 9-27 STA. 156+00 TO STA. 169+00

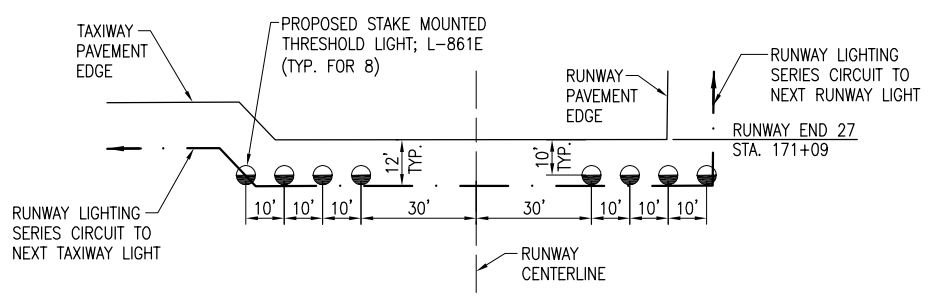
MAR 25, 2014 2:44 PM H4GL000382
p:\sps-svc306\hanson\dom\hanson\Projects\Documents\13\jobs\13A0058\13A0058D\CAD\Airport\Sheet\C-142-ELE



RADIUS DETAIL "A"
"NOT TO SCALE"



RADIUS DETAIL "B"
"NOT TO SCALE"

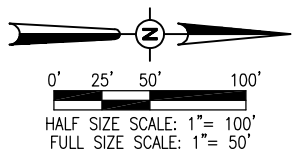


PROPOSED RUNWAY END 27 THRESHOLD DETAIL
"NOT TO SCALE"

SEE SHEET 18 FOR LEGEND

THE LOCATION, SIZE, AND TYPE OF MATERIAL OF EXISTING UNDERGROUND AND/OR ABOVEGROUND UTILITIES INDICATED ON THE PLANS ARE NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY WHATEVER IN RESPECT TO THE ACCURACY, COMPLETENESS, OR SUFFICIENCY OF THE INFORMATION. THERE IS NO GUARANTEE, EITHER EXPRESSED OR IMPLIED, THAT THE LOCATIONS, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND UTILITIES INDICATED ARE REPRESENTATIVE OF THOSE TO BE ENCOUNTERED IN THE CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ACTUAL LOCATION OF ALL SUCH FACILITIES, INCLUDING SERVICE CONNECTIONS TO UNDERGROUND UTILITIES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES OF HIS OPERATIONAL PLANS AND SHALL OBTAIN FROM THE RESPECTIVE UTILITY COMPANIES DETAILED INFORMATION AND ASSISTANCE RELATIVE TO THE LOCATION OF THEIR FACILITIES AND THE WORKING SCHEDULE OF THE COMPANIES FOR REMOVAL OR ADJUSTMENT WHERE REQUIRED. IN THE EVENT AN UNEXPECTED UTILITY INTERFERENCE IS ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY COMPANY OF JURISDICTION. THE OWNER'S REPRESENTATIVE AND/OR THE RESIDENT ENGINEER SHALL ALSO BE IMMEDIATELY NOTIFIED. ANY DAMAGE TO SUCH MAINS AND SERVICES SHALL BE RESTORED TO SERVICE AT ONCE AND PAID FOR BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CONTRACT.

ALL UTILITY CABLES AND LINES SHALL BE LOCATED BY THE RESPECTIVE UTILITY. CONTACT JULIE (JOINT UTILITY LOCATION INFORMATION FOR EXCAVATORS) FOR UTILITY INFORMATION, PHONE: 1-800-892-0123. CONTACT THE FAA (FEDERAL AVIATION ADMINISTRATION) FOR ASSISTANCE IN LOCATING FAA CABLES AND UTILITIES. LOCATION OF FAA POWER, CONTROL, AND COMMUNICATION CABLES SHALL BE COORDINATED WITH AND/OR LOCATED BY THE FAA. ALSO CONTACT AIRPORT DIRECTOR/MANAGER AND AIRPORT PERSONNEL FOR ASSISTANCE IN LOCATING UNDERGROUND AIRPORT CABLES AND/OR UTILITIES. ALSO COORDINATE WORK WITH ALL ABOVEGROUND UTILITIES.



REVISION	DATE

CRAWFORD COUNTY AIRPORT
ROBINSON
CRAWFORD COUNTY, ILLINOIS
S.B.C. PROJ.: 3-17-SBGP-XX
IL PROJ.: RSY-4334

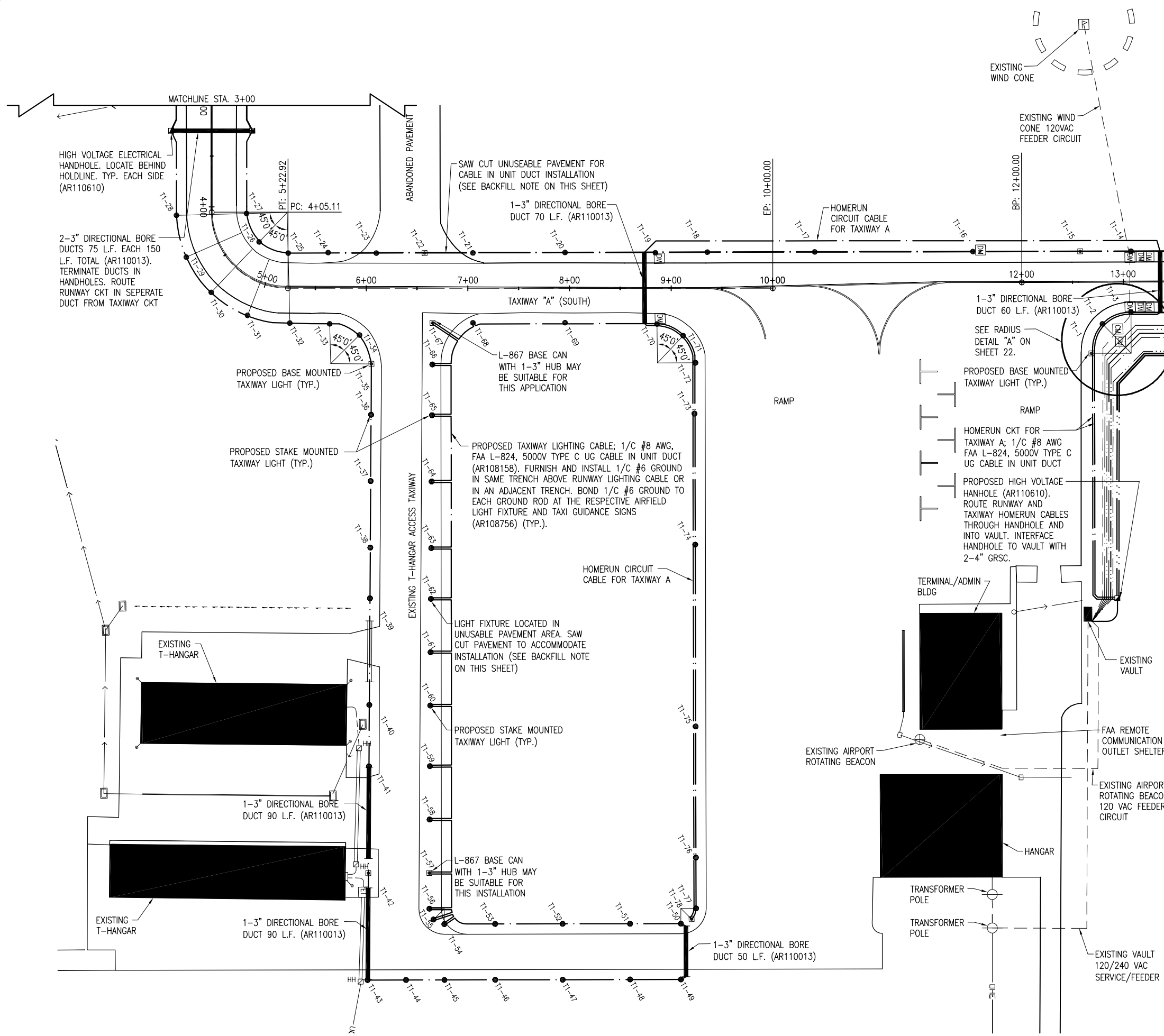
Hanson Proj. No. 13A0058	BAK	07/23/13
Filename: C-142-ELE.dwg	BAK	07/23/13
Scale 1" = 50'	REVIEWED	03/07/14
Date 03/07/14		

HANSON
Professional Services Inc. 2014
Hanson Professional Services Inc.
1525 South Sixth Street
Springfield, Illinois 62703-2986
Ph: (217) 788-2450 Fax: (217) 788-2503
www.hanson-inc.com
Offices Nationwide

REPLACE MRL AND MITL SYSTEMS
PROPOSED ELECTRICAL PLAN TAXIWAY A (NORTH)

APR 02, 2014 9:16 AM HAGL000382
pw:\sps-svc206\hanson\dom\hanson\Projects\Documents\13\jobs\13A0058\CAD\Airport\Sheet\C-142-ELE

MAR 25, 2014 1:19 PM H:\GLO00382
 pw:\sri-sv206\hanson.dom\hanson_projects\Documents\13\0058\13A0058D\CAD\Wiporth\Sheet\13-142-ELE



PAVEMENT BACKFILL NOTES **RB020**

IN ORDER TO INSTALL SEVERAL PROPOSED TAXIWAY LIGHTS ALONG TAXIWAY "A" (SOUTH) AND THE T-HANGAR ACCESS TAXIWAY THE CONTRACTOR WILL BE REQUIRED TO SAW AND REMOVE EXISTING PAVEMENT WHERE THE PROPOSED LIGHT AND ASSOCIATED CABLING WILL BE PLACED.

THE CONTRACTOR WILL SAW THE PAVEMENT FULL DEPTH AT A MINIMUM WIDTH OF 12' TO INSTALL THE PROPOSED CABLING AND THE STAKE MOUNTED LIGHTS. THE PAVEMENT WILL BE SAWS AT A MINIMUM WIDTH OF 32' TO INSTALL A PROPOSED BASE MOUNTED LIGHT.

THE CONTRACTOR MAY USE EITHER A TRENCHER OR BACKHOE TO REMOVE THE PAVEMENT. IF THE CONTRACTOR USES A TRENCHER, THEN THE REMOVED MATERIAL CAN BE USED AS BACKFILL. IF A BACKHOE IS USED THE REMOVED BITUMINOUS PAVEMENT WILL BE DISPOSED OF OFF THE AIRPORT SITE.

AFTER THE PROPOSED LIGHT AND CABLE HAS BEEN INSTALLED THE CONTRACTOR WILL BACKFILL THE TRENCH WITH 6" OF COMPACTED SAND AND THE REMAINING DEPTH WITH THE EXCAVATED MATERIAL. THE EXCAVATED MATERIAL WILL BE COMPACTED TO THE SATISFACTION OF THE RESIDENT ENGINEER. IF THERE IS ANY REMAINING EXCAVATED MATERIAL AFTER THE TRENCH HAS BEEN BACKFILLED, THEN THE CONTRACTOR WILL LEGALLY DISPOSE OF IT OFF THE AIRPORT SITE.

ALL WORK ASSOCIATED WITH SAWING THE EXISTING PAVEMENT, REMOVAL OF THE EXISTING PAVEMENT AND BACKFILLING THE TRENCH WILL BE CONSIDERED AS AN INCIDENTAL ITEM TO THE INSTALLATION OF THE PROPOSED CABLE AND LIGHTS AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

LEGEND

[Symbol]	EXISTING PAVEMENT
[Symbol]	EXISTING ELECTRICAL DUCT
[Symbol]	PROPOSED ELECTRICAL DUCT
[Symbol]	EXISTING MARKING
[Symbol]	PROPOSED 1/C #8 AWG, FAA L-824, 5000 VOLT TYPE C UNDERGROUND CABLE IN UNIT DUCT
[Symbol]	PROPOSED 2-1/C #8 AWG FAA L-824, 5000 VOLT TYPE C UNDERGROUND CABLE IN UNIT DUCT
[Symbol]	EXISTING REIL CIRCUIT
[Symbol]	EXISTING PLASI CIRCUIT
[Symbol]	EXISTING UNDERDRAIN
[Symbol]	EXISTING UNDERDRAIN CLEANOUT
[Symbol]	EXISTING STORM SEWER
[Symbol]	EXISTING INLET
[Symbol]	PROPOSED STAKE MOUNTED RUNWAY LIGHT
[Symbol]	PROPOSED BASE MOUNTED RUNWAY LIGHT
[Symbol]	PROPOSED STAKE MOUNTED THRESHOLD LIGHT
[Symbol]	PROPOSED STAKE MOUNTED TAXIWAY LIGHT
[Symbol]	PROPOSED BASE MOUNTED TAXIWAY LIGHT
[Symbol]	PROPOSED TAXI GUIDANCE SIGN
[Symbol]	EXISTING CABLE MARKER
[Symbol]	EXISTING DUCT MARKER
[Symbol]	EXISTING REILS
[Symbol]	EXISTING PLASI
[Symbol]	EXISTING SPLICE CAN
[Symbol]	EXISTING WIND CONE

Hanson Proj. No. 13A0058
 Filename: C-142-ELE.dwg
 Scale: 1" = 50'
 Date: 03/07/14

LAYOUT	BAK	07/23/13
DRAWN	BAK	07/23/13
REVIEWED	CAH/KNL	03/07/14

HANSON
 Professional Services Inc. 2014
 1525 South Sixth Street
 Springfield, Illinois 62703-2986
 Ph: (217) 788-2450 Fax: (217) 788-2503
 www.hanson-inc.com
 Offices Nationwide

REPLACE MIRL AND MITL SYSTEMS
PROPOSED ELECTRICAL PLAN TAXIWAY A (SOUTH)

23
 23 of 48 sheets

REVISION
 DATE

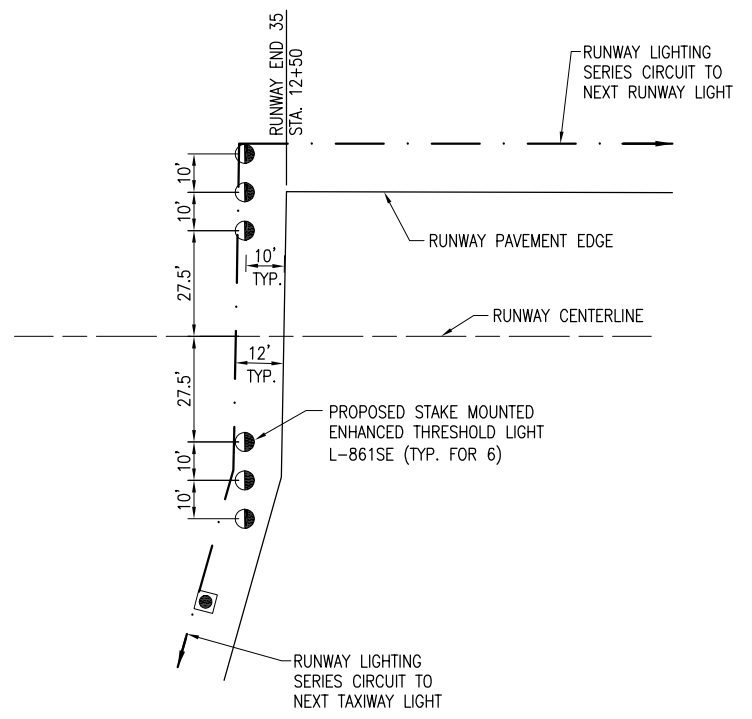
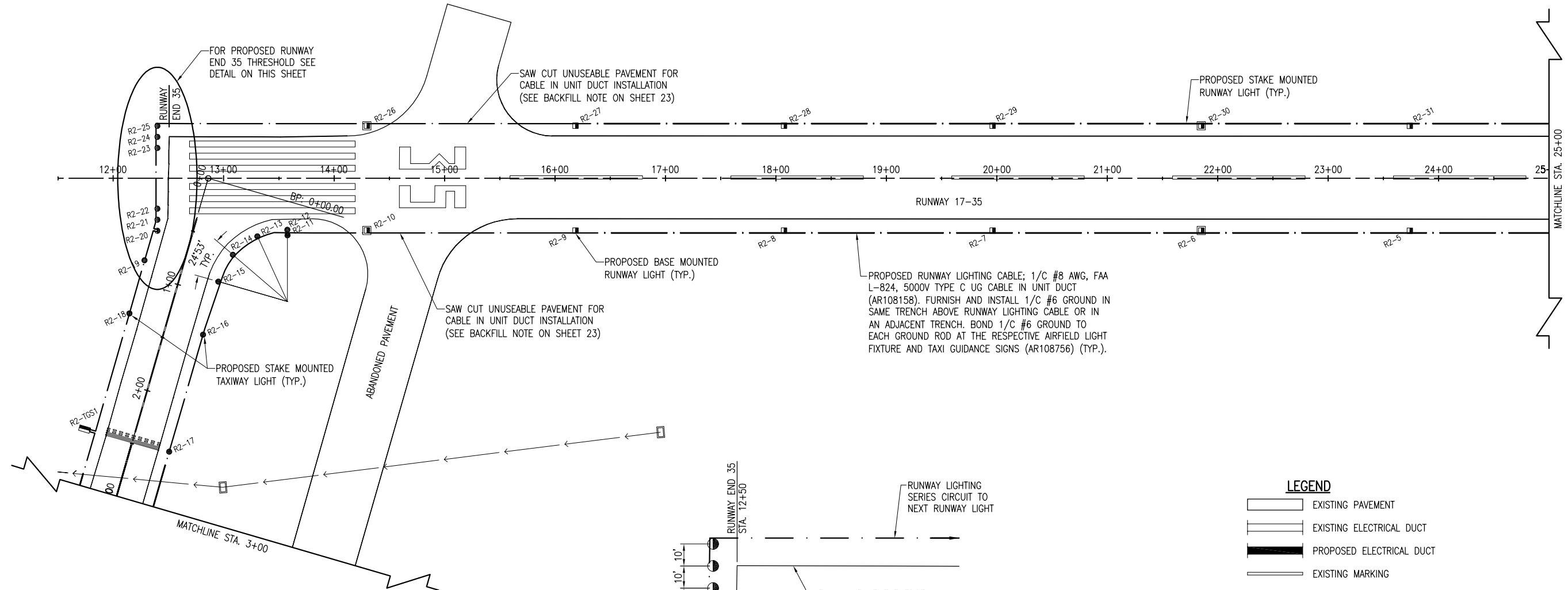
CRAWFORD COUNTY AIRPORT
 ROBINSON
 CRAWFORD COUNTY, ILLINOIS

IL PROJ.: RSY-4334
 S.B.G. PROJ.: 3-17-SBGP-XX

EXISTING PAVEMENT	[Symbol]
EXISTING ELECTRICAL DUCT	[Symbol]
PROPOSED ELECTRICAL DUCT	[Symbol]
EXISTING MARKING	[Symbol]
PROPOSED 1/C #8 AWG, FAA L-824, 5000 VOLT TYPE C UNDERGROUND CABLE IN UNIT DUCT	[Symbol]
PROPOSED 2-1/C #8 AWG FAA L-824, 5000 VOLT TYPE C UNDERGROUND CABLE IN UNIT DUCT	[Symbol]
EXISTING REIL CIRCUIT	[Symbol]
EXISTING PLASI CIRCUIT	[Symbol]
EXISTING UNDERDRAIN	[Symbol]
EXISTING UNDERDRAIN CLEANOUT	[Symbol]
EXISTING STORM SEWER	[Symbol]
EXISTING INLET	[Symbol]
PROPOSED STAKE MOUNTED RUNWAY LIGHT	[Symbol]
PROPOSED BASE MOUNTED RUNWAY LIGHT	[Symbol]
PROPOSED STAKE MOUNTED THRESHOLD LIGHT	[Symbol]
PROPOSED STAKE MOUNTED TAXIWAY LIGHT	[Symbol]
PROPOSED BASE MOUNTED TAXIWAY LIGHT	[Symbol]
PROPOSED TAXI GUIDANCE SIGN	[Symbol]
EXISTING CABLE MARKER	[Symbol]
EXISTING DUCT MARKER	[Symbol]
EXISTING REILS	[Symbol]
EXISTING PLASI	[Symbol]
EXISTING SPLICE CAN	[Symbol]
EXISTING WIND CONE	[Symbol]

REPLACE MIRL AND MITL SYSTEMS
 PROPOSED ELECTRICAL PLAN TAXIWAY A (SOUTH)

23
 23 of 48 sheets



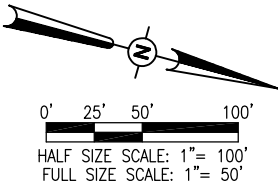
PROPOSED RUNWAY END 35 THRESHOLD DETAIL
"NOT TO SCALE"

LEGEND

- EXISTING PAVEMENT
- EXISTING ELECTRICAL DUCT
- PROPOSED ELECTRICAL DUCT
- EXISTING MARKING
- PROPOSED 1/C #8 AWG, FAA L-824, 5000 VOLT TYPE C UNDERGROUND CABLE IN UNIT DUCT
- PROPOSED 2-1/C #8 AWG FAA L-824, 5000 VOLT TYPE C UNDERGROUND CABLE IN UNIT DUCT
- EXISTING REIL CIRCUIT
- EXISTING PLASI CIRCUIT
- EXISTING UNDERDRAIN
- EXISTING UNDERDRAIN CLEANOUT
- EXISTING STORM SEWER
- EXISTING INLET
- PROPOSED STAKE MOUNTED RUNWAY LIGHT
- PROPOSED BASE MOUNTED RUNWAY LIGHT
- PROPOSED STAKE MOUNTED THRESHOLD LIGHT
- PROPOSED STAKE MOUNTED TAXIWAY LIGHT
- PROPOSED BASE MOUNTED TAXIWAY LIGHT
- PROPOSED TAXI GUIDANCE SIGN
- EXISTING CABLE MARKER
- EXISTING DUCT MARKER
- EXISTING REILS
- EXISTING PLASI
- EXISTING SPLICE CAN
- EXISTING WIND CONE

THE LOCATION, SIZE, AND TYPE OF MATERIAL OF EXISTING UNDERGROUND AND/OR ABOVEGROUND UTILITIES INDICATED ON THE PLANS ARE NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY WHATEVER IN RESPECT TO THE ACCURACY, COMPLETENESS, OR SUFFICIENCY OF THE INFORMATION. THERE IS NO GUARANTEE, EITHER EXPRESSED OR IMPLIED, THAT THE LOCATIONS, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND UTILITIES INDICATED ARE REPRESENTATIVE OF THOSE TO BE ENCOUNTERED IN THE CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ACTUAL LOCATION OF ALL SUCH FACILITIES, INCLUDING SERVICE CONNECTIONS TO UNDERGROUND UTILITIES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES OF HIS OPERATIONAL PLANS AND SHALL OBTAIN FROM THE RESPECTIVE UTILITY COMPANIES DETAILED INFORMATION AND ASSISTANCE RELATIVE TO THE LOCATION OF THEIR FACILITIES AND THE WORKING SCHEDULE OF THE COMPANIES FOR REMOVAL OR ADJUSTMENT WHERE REQUIRED. IN THE EVENT AN UNEXPECTED UTILITY INTERFERENCE IS ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY COMPANY OF JURISDICTION. THE OWNER'S REPRESENTATIVE AND/OR THE RESIDENT ENGINEER SHALL ALSO BE IMMEDIATELY NOTIFIED. ANY DAMAGE TO SUCH MAINS AND SERVICES SHALL BE RESTORED TO SERVICE AT ONCE AND PAID FOR BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CONTRACT.

ALL UTILITY CABLES AND LINES SHALL BE LOCATED BY THE RESPECTIVE UTILITY. **CONTACT JULIE (JOINT UTILITY LOCATION INFORMATION FOR EXCAVATORS) FOR UTILITY INFORMATION, PHONE: 1-800-892-0123.** CONTACT THE FAA (FEDERAL AVIATION ADMINISTRATION) FOR ASSISTANCE IN LOCATING FAA CABLES AND UTILITIES. LOCATION OF FAA POWER, CONTROL, AND COMMUNICATION CABLES SHALL BE COORDINATED WITH AND/OR LOCATED BY THE FAA. ALSO CONTACT AIRPORT DIRECTOR/MANAGER AND AIRPORT PERSONNEL FOR ASSISTANCE IN LOCATING UNDERGROUND AIRPORT CABLES AND/OR UTILITIES. ALSO COORDINATE WORK WITH ALL ABOVEGROUND UTILITIES.



REVISION	DATE

CRAWFORD COUNTY AIRPORT
ROBINSON
CRAWFORD COUNTY, ILLINOIS

IL. PROJ.: RSY-4334 S.B.C. PROJ.: 3-17-SBGP-XX

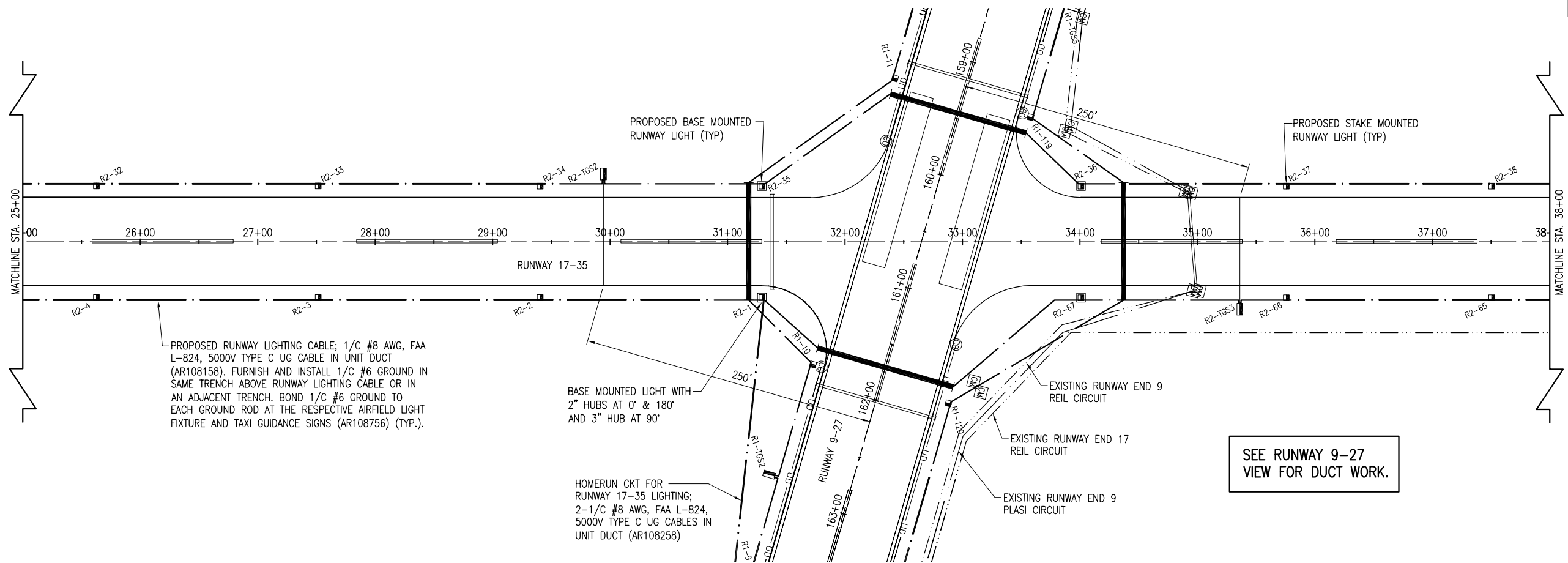
Hanson Proj. No. 13A0058	BAK	07/23/13
Filename: C-142-ELE.dwg	BAK	07/23/13
Scale: 1" = 50'		
Date: 03/07/14		
LAYOUT		
DRAWN		
REVIEWED		

HANSON
Professional Services Inc. 2014
1525 South Sixth Street
Springfield, Illinois 62703-2986
Ph: (217) 788-2450 Fax: (217) 788-2503
www.hanson-inc.com
Offices Nationwide

REPLACE MRL AND MITL SYSTEMS

PROPOSED ELECTRICAL PLAN
RUNWAY 17-35 STA. 12+50 TO STA. 25+00

APR 01, 2014 9:50 AM HAGL000382
pw:\sps-svc306\hanson\dom\hanson\Projects\Documents\13\jobs\13A0058\13A0058D\CAD\Airport\Sheet\C-142-ELE



PROPOSED RUNWAY LIGHTING CABLE: 1/C #8 AWG, FAA L-824, 5000V TYPE C UG CABLE IN UNIT DUCT (AR108158). FURNISH AND INSTALL 1/C #6 GROUND IN SAME TRENCH ABOVE RUNWAY LIGHTING CABLE OR IN AN ADJACENT TRENCH. BOND 1/C #6 GROUND TO EACH GROUND ROD AT THE RESPECTIVE AIRFIELD LIGHT FIXTURE AND TAXI GUIDANCE SIGNS (AR108756) (TYP.).

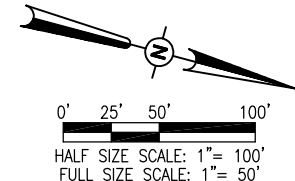
BASE MOUNTED LIGHT WITH 2" HUBS AT 0° & 180° AND 3" HUB AT 90°

HOMERUN CKT FOR RUNWAY 17-35 LIGHTING; 2-1/C #8 AWG, FAA L-824, 5000V TYPE C UG CABLES IN UNIT DUCT (AR108258)

SEE RUNWAY 9-27 VIEW FOR DUCT WORK.

LEGEND

- EXISTING PAVEMENT
- EXISTING ELECTRICAL DUCT
- PROPOSED ELECTRICAL DUCT
- EXISTING MARKING
- PROPOSED 1/C #8 AWG, FAA L-824, 5000 VOLT TYPE C UNDERGROUND CABLE IN UNIT DUCT
- PROPOSED 2-1/C #8 AWG FAA L-824, 5000 VOLT TYPE C UNDERGROUND CABLE IN UNIT DUCT
- EXISTING REIL CIRCUIT
- EXISTING PLASI CIRCUIT
- EXISTING UNDERDRAIN
- EXISTING UNDERDRAIN CLEANOUT
- EXISTING STORM SEWER
- EXISTING INLET
- PROPOSED STAKE MOUNTED RUNWAY LIGHT
- PROPOSED BASE MOUNTED RUNWAY LIGHT
- PROPOSED STAKE MOUNTED THRESHOLD LIGHT
- PROPOSED STAKE MOUNTED TAXIWAY LIGHT
- PROPOSED BASE MOUNTED TAXIWAY LIGHT
- PROPOSED TAXI GUIDANCE SIGN
- EXISTING CABLE MARKER
- EXISTING DUCT MARKER
- EXISTING REILS
- EXISTING PLASI
- EXISTING SPLICE CAN
- EXISTING WIND CONE



THE LOCATION, SIZE, AND TYPE OF MATERIAL OF EXISTING UNDERGROUND AND/OR ABOVEGROUND UTILITIES INDICATED ON THE PLANS ARE NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY WHATEVER IN RESPECT TO THE ACCURACY, COMPLETENESS, OR SUFFICIENCY OF THE INFORMATION. THERE IS NO GUARANTEE, EITHER EXPRESSED OR IMPLIED, THAT THE LOCATIONS, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND UTILITIES INDICATED ARE REPRESENTATIVE OF THOSE TO BE ENCOUNTERED IN THE CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ACTUAL LOCATION OF ALL SUCH FACILITIES, INCLUDING SERVICE CONNECTIONS TO UNDERGROUND UTILITIES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES OF HIS OPERATIONAL PLANS AND SHALL OBTAIN FROM THE RESPECTIVE UTILITY COMPANIES DETAILED INFORMATION AND ASSISTANCE RELATIVE TO THE LOCATION OF THEIR FACILITIES AND THE WORKING SCHEDULE OF THE COMPANIES FOR REMOVAL OR ADJUSTMENT WHERE REQUIRED. IN THE EVENT AN UNEXPECTED UTILITY INTERFERENCE IS ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY COMPANY OF JURISDICTION. THE OWNER'S REPRESENTATIVE AND/OR THE RESIDENT ENGINEER SHALL ALSO BE IMMEDIATELY NOTIFIED. ANY DAMAGE TO SUCH MAINS AND SERVICES SHALL BE RESTORED TO SERVICE AT ONCE AND PAID FOR BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CONTRACT.

ALL UTILITY CABLES AND LINES SHALL BE LOCATED BY THE RESPECTIVE UTILITY. **CONTACT JULIE (JOINT UTILITY LOCATION INFORMATION FOR EXCAVATORS) FOR UTILITY INFORMATION, PHONE: 1-800-892-0123.** CONTACT THE FAA (FEDERAL AVIATION ADMINISTRATION) FOR ASSISTANCE IN LOCATING FAA CABLES AND UTILITIES. LOCATION OF FAA POWER, CONTROL, AND COMMUNICATION CABLES SHALL BE COORDINATED WITH AND/OR LOCATED BY THE FAA. ALSO CONTACT AIRPORT DIRECTOR/MANAGER AND AIRPORT PERSONNEL FOR ASSISTANCE IN LOCATING UNDERGROUND AIRPORT CABLES AND/OR UTILITIES. ALSO COORDINATE WORK WITH ALL ABOVEGROUND UTILITIES.

MAR 25, 2014 1:20 PM H:\GLO00382 p:\sps-svc306\hanson.dom\hanson_projects\Documents\13\jobs\13A0058\13A0058D\CAD\Airport\Sheet\C-142-ELE

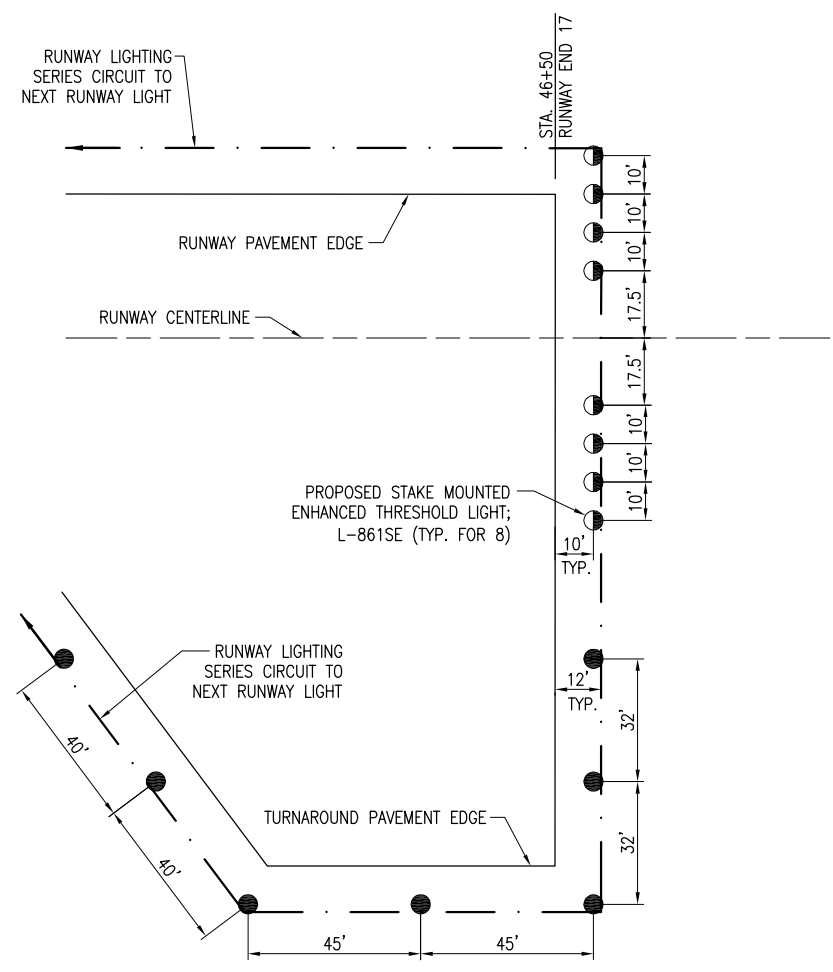
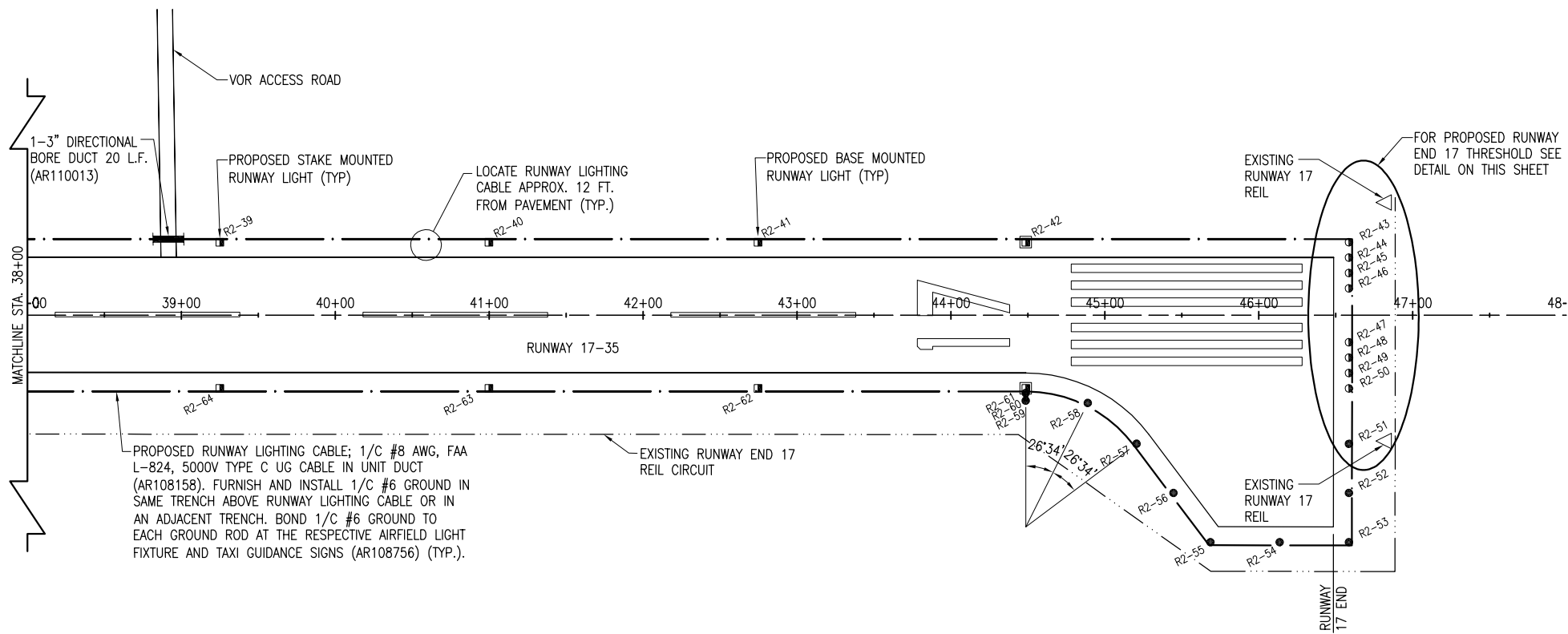
DATE	REVISION

CRAWFORD COUNTY AIRPORT
ROBINSON
CRAWFORD COUNTY, ILLINOIS
IL PROJ.: RSY-4334 S.B.C. PROJ.: 3-17-SBGP-XX

Hanson Proj. No. 13A0058	BAK	07/23/13
Filename C-142-ELE.dwg	BAK	07/23/13
Scale 1" = 50'		
Date 03/07/14		
LAYOUT		
DRAWN		
REVIEWED		

HANSON
Professional Services Inc. 2014
1525 South Sixth Street
Springfield, Illinois 62703-2986
Ph: (217) 788-2450 Fax: (217) 788-2503
www.hanson-inc.com
Offices Nationwide

REPLACE MRL AND MITL SYSTEMS
PROPOSED ELECTRICAL PLAN
RUNWAY 17-35 STA. 25+00 TO STA. 38+00

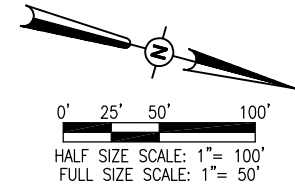


PROPOSED RUNWAY END 17 THRESHOLD DETAIL
"NOT TO SCALE"

THE LOCATION, SIZE, AND TYPE OF MATERIAL OF EXISTING UNDERGROUND AND/OR ABOVEGROUND UTILITIES INDICATED ON THE PLANS ARE NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY WHATEVER IN RESPECT TO THE ACCURACY, COMPLETENESS, OR SUFFICIENCY OF THE INFORMATION. THERE IS NO GUARANTEE, EITHER EXPRESSED OR IMPLIED, THAT THE LOCATIONS, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND UTILITIES INDICATED ARE REPRESENTATIVE OF THOSE TO BE ENCOUNTERED IN THE CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ACTUAL LOCATION OF ALL SUCH FACILITIES, INCLUDING SERVICE CONNECTIONS TO UNDERGROUND UTILITIES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES OF HIS OPERATIONAL PLANS AND SHALL OBTAIN FROM THE RESPECTIVE UTILITY COMPANIES DETAILED INFORMATION AND ASSISTANCE RELATIVE TO THE LOCATION OF THEIR FACILITIES AND THE WORKING SCHEDULE OF THE COMPANIES FOR REMOVAL OR ADJUSTMENT WHERE REQUIRED. IN THE EVENT AN UNEXPECTED UTILITY INTERFERENCE IS ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY COMPANY OF JURISDICTION. THE OWNER'S REPRESENTATIVE AND/OR THE RESIDENT ENGINEER SHALL ALSO BE IMMEDIATELY NOTIFIED. ANY DAMAGE TO SUCH MAINS AND SERVICES SHALL BE RESTORED TO SERVICE AT ONCE AND PAID FOR BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CONTRACT.

ALL UTILITY CABLES AND LINES SHALL BE LOCATED BY THE RESPECTIVE UTILITY. **CONTACT JULIE (JOINT UTILITY LOCATION INFORMATION FOR EXCAVATORS) FOR UTILITY INFORMATION, PHONE: 1-800-892-0123.** CONTACT THE FAA (FEDERAL AVIATION ADMINISTRATION) FOR ASSISTANCE IN LOCATING FAA CABLES AND UTILITIES. LOCATION OF FAA POWER, CONTROL, AND COMMUNICATION CABLES SHALL BE COORDINATED WITH AND/OR LOCATED BY THE FAA. ALSO CONTACT AIRPORT DIRECTOR/MANAGER AND AIRPORT PERSONNEL FOR ASSISTANCE IN LOCATING UNDERGROUND AIRPORT CABLES AND/OR UTILITIES. ALSO COORDINATE WORK WITH ALL ABOVEGROUND UTILITIES.

- LEGEND**
- EXISTING PAVEMENT
 - EXISTING ELECTRICAL DUCT
 - PROPOSED ELECTRICAL DUCT
 - EXISTING MARKING
 - PROPOSED 1/C #8 AWG, FAA L-824, 5000 VOLT TYPE C UNDERGROUND CABLE IN UNIT DUCT
 - PROPOSED 2-1/C #8 AWG FAA L-824, 5000 VOLT TYPE C UNDERGROUND CABLE IN UNIT DUCT
 - EXISTING REIL CIRCUIT
 - EXISTING PLASI CIRCUIT
 - EXISTING UNDERDRAIN
 - EXISTING UNDERDRAIN CLEANOUT
 - EXISTING STORM SEWER
 - EXISTING INLET
 - PROPOSED STAKE MOUNTED RUNWAY LIGHT
 - PROPOSED BASE MOUNTED RUNWAY LIGHT
 - PROPOSED STAKE MOUNTED THRESHOLD LIGHT
 - PROPOSED STAKE MOUNTED TAXIWAY LIGHT
 - PROPOSED BASE MOUNTED TAXIWAY LIGHT
 - PROPOSED TAXI GUIDANCE SIGN
 - EXISTING CABLE MARKER
 - EXISTING DUCT MARKER
 - EXISTING REILS
 - EXISTING PLASI
 - EXISTING SPLICE CAN
 - EXISTING WIND CONE



MAR 25, 2014 1:21 PM H:\GLO00382 p:\s\spc\svr306\hanson.dom\hanson_projects\Documents\13\jobs\13A0058\13A0058D\CAD\Airport\Sheet\C-142-ELE

REVISION	
DATE	
CRAWFORD COUNTY AIRPORT ROBINSON CRAWFORD COUNTY, ILLINOIS	
ILL. PROJ.: RSY-4334 S.B.C. PROJ.: 3-17-SBGP-XX	

Hanson Proj. No. 13A0058	BAK	07/23/13
Filename C-142-ELE.dwg	BAK	07/23/13
Scale 1" = 50'	DATE	03/07/14
LAYOUT	REVIEWED	CAH/KNL

HANSON
 © Copyright Hanson Professional Services Inc. 2014
Hanson Professional Services Inc.
 1525 South Sixth Street
 Springfield, Illinois 62703-2986
 Ph: (217) 788-2450 Fax: (217) 788-2503
 www.hanson-inc.com
 Offices Nationwide

REPLACE MRL AND MITL SYSTEMS
PROPOSED ELECTRICAL PLAN
 RUNWAY 17-35 STA. 38+00 TO STA. 48+00


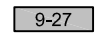

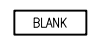
AIRFIELD LIGHTING NOTES

- ALL WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS SHALL BE COORDINATED WITH THE AIRPORT DIRECTOR/MANAGER. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
- CONTRACTOR SHALL FIELD VERIFY EXISTING SITE CONDITIONS. CONTRACTOR SHALL FIELD VERIFY RESPECTIVE CIRCUITS AND POWER SOURCES PRIOR TO REMOVING OR DISCONNECTING THE RESPECTIVE AIRFIELD LIGHTING, NAVAID, OR OTHER DEVICE.
- PROPOSED RUNWAY, THRESHOLD, AND TAXIWAY LIGHTS SHALL BE PLACED 10' (FT.) FROM THE PAVEMENT EDGE UNLESS SHOWN OTHERWISE ON THESE CONSTRUCTION DRAWINGS. PROPOSED TAXI GUIDANCE SIGNS SHALL BE LOCATED SUCH THAT THE CLOSEST SIDE OF THE SIGN IS 15' FROM THE PAVEMENT EDGE, UNLESS SHOWN OTHERWISE.
- PROPOSED RUNWAY LIGHTS, THRESHOLD LIGHTS, TAXIWAY LIGHTS, GUIDANCE SIGNS, OTHER AIRFIELD LIGHTING, SPLICE CANS, HANDHOLES, MANHOLES, ELECTRICAL DUCTS, AND CABLE SHALL BE INSTALLED AT THE LOCATIONS SHOWN AND IN COMPLIANCE WITH THE SPECIFICATIONS, SPECIAL PROVISIONS, RESPECTIVE DETAILS, AND MANUFACTURER'S RECOMMENDATIONS.
- PROPOSED CABLE FOR RUNWAY AND TAXIWAY LIGHTING SHALL BE INSTALLED APPROXIMATELY 12' FROM THE PAVEMENT EDGE. CABLES SHALL BE PLACED A MINIMUM OF 18" BELOW FINISHED GRADE.
- THE PROPOSED RUNWAY AND TAXIWAY LIGHTING CABLE SHALL BE 1/C, #8 AWG, FAA L-824, 5000 VOLT, TYPE C UNDERGROUND CABLE IN UNIT DUCT.
- THE PROPOSED RUNWAY HOMERUN CABLES SHALL BE 2-1/C, #8 AWG, FAA L-824, 5000 VOLT, TYPE C UNDERGROUND CABLE IN UNIT DUCT.
- IN AREAS WHERE THERE IS A CONGESTION OF CABLES OR WHERE THE PROPOSED CABLE CROSSES AN EXISTING CABLE, THE CONTRACTOR IS REQUIRED TO HAND DIG THE TRENCH NECESSARY FOR THE PROPOSED CABLE. AT OTHER LOCATIONS, THE PROPOSED CABLE MAY BE TRENCHED OR PLOWED INTO PLACE. HAND DIGGING, TRENCHING AND/OR PLOWING WILL BE CONSIDERED INCIDENTAL TO THE PROPOSED CABLES AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
- PROPOSED RUNWAY LIGHTS SHALL BE FITTED WITH LENSES IN ACCORDANCE WITH THE "LIGHT LENS SCHEDULE". ALL PROPOSED TAXIWAY LIGHTS WILL BE FITTED WITH 360° BLUE LENSES.
- ALL PROPOSED RUNWAY, THRESHOLD, TAXIWAY LIGHTS, AND TAXI GUIDANCE SIGNS SHALL BE TAGGED BY THE CONTRACTOR IN ACCORDANCE WITH THE LIGHT NUMBERS SHOWN ON THESE CONSTRUCTION DRAWINGS.
- SEE "TAXI GUIDANCE SIGN SCHEDULE" FOR INFO ON SIGN LEGENDS.
- THE CONTRACTOR SHALL SECURE, IDENTIFY AND PLACE ALL TEMPORARY EXPOSED WIRING IN CONDUIT, DUCT OR UNIT DUCT TO PREVENT ELECTROCUTION AND FIRE IGNITION SOURCES AS PER THE REQUIREMENTS OF FAA AC 150/5370-2F, PART 218, PARAGRAPH C. ALL LABOR, MATERIALS, AND TIME NECESSARY TO COMPLY WITH THIS REQUIREMENT SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
- HOMERUN CABLES FOR A RESPECTIVE CIRCUIT THAT ARE INSTALLED IN CONDUIT OR DUCT SHALL BE RUN TOGETHER IN THE SAME RACEWAY OR DUCT.
- EXISTING AIRFIELD LIGHTING CABLES (SCHEDULED FOR REPLACEMENT) IN AREAS OF NEW WORK SHALL BE DISCONNECTED & REMOVED WHERE IN CONFLICT WITH NEW CONSTRUCTION. IN OTHER AREAS CABLES MAY BE ABANDONED IN PLACE.
- THE CONTRACTOR IS REQUIRED TO FILL IN ALL HOLES AND DEPRESSIONS RESULTING FROM THE NEW WORK, WITH EARTH MATERIAL. THE AREAS SHALL BE COMPACTED TO PREVENT FUTURE SETTLEMENT AND FERTILIZED, SEEDDED, AND MULCHED IN ACCORDANCE WITH ITEMS 901 AND 908 RESPECTIVELY.
- IN THE EVENT THAT OTHER CONSTRUCTION PROJECTS ARE IN PROGRESS AT THE AIRPORT AT THE SAME TIME AS THIS PROJECT, THE CONTRACTOR WILL BE REQUIRED TO COOPERATE WITH ALL OTHER CONTRACTORS AND THE AIRPORT MANAGER IN THE COORDINATION OF THE WORK.
- NO CONNECTION TO AN ACTIVE LIGHTING CIRCUIT WILL BE BROKEN UNTIL THE CIRCUIT HAS BEEN TURNED OFF IN ACCORDANCE WITH NOTE 1.

LIGHT LENS SCHEDULE			
LIGHT NUMBERS	LENS	ORIENTATION	FIXTURE TYPE
R1-1 TO R1-5	BLUE	---	L-861T(L)
R1-6 TO R1-15	CLEAR WHITE/YELLOW	YELLOW SIDE FACING WEST (TOWARD RUNWAY 9 APPROACH)	L-861
R1-16 TO R1-21	CLEAR WHITE	---	L-861
R1-22	CLEAR WHITE/YELLOW	YELLOW SIDE FACING EAST (TOWARD RUNWAY 27 APPROACH)	L-861
R1-23 TO R1-55	BLUE	---	L-861T(L)
R1-56 TO R1-59	CLEAR WHITE/YELLOW	YELLOW SIDE FACING EAST (TOWARD RUNWAY 27 APPROACH)	L-861
R1-60 TO R1-73	BLUE	---	L-861T(L)
R1-74 TO R1-79	CLEAR WHITE/YELLOW	YELLOW SIDE FACING EAST (TOWARD RUNWAY 27 APPROACH)	L-861
R1-80 TO R1-89	BLUE	---	L-861T(L)
R1-90 TO R1-97	RED/GREEN	GREEN SIDE FACING WEST (TOWARD RUNWAY 9 APPROACH)	L-861E
R1-98 TO R1-108	CLEAR WHITE/YELLOW	YELLOW SIDE FACING EAST (TOWARD RUNWAY 27 APPROACH)	L-861
R1-109 TO R1-114	CLEAR WHITE	---	L-861
R1-115 TO R1-124	CLEAR WHITE/YELLOW	YELLOW SIDE FACING WEST (TOWARD RUNWAY 9 APPROACH)	L-861
R1-125 TO R1-132	RED/GREEN	GREEN SIDE FACING EAST (TOWARD RUNWAY 27 APPROACH)	L-861E
R1-133 TO R1-134	BLUE	---	L-861T(L)
T1-1 TO T1-78	BLUE	---	L-861T(L)
R2-1	CLEAR WHITE	YELLOW SIDE FACING SOUTH (TOWARD RUNWAY 35 APPROACH)	L-861
R2-2 TO R2-10	CLEAR WHITE/YELLOW	YELLOW SIDE FACING NORTH (TOWARD RUNWAY 17 APPROACH)	L-861
R2-11 TO R2-19	BLUE	---	L-861T(L)
R2-20 TO R2-25	RED/GREEN	GREEN SIDE FACING SOUTH (TOWARD RUNWAY 35 APPROACH)	L-861SE
R2-26 TO R2-34	CLEAR WHITE/YELLOW	YELLOW SIDE FACING NORTH (TOWARD RUNWAY 17 APPROACH)	L-861
R2-35 TO R2-42	CLEAR WHITE	YELLOW SIDE FACING SOUTH (TOWARD RUNWAY 35 APPROACH)	L-861
R2-43 TO R2-50	RED/GREEN	GREEN SIDE FACING NORTH (TOWARD RUNWAY 17 APPROACH)	L-861SE
R2-51 TO R2-60	BLUE	---	L-861T(L)
R2-61 TO R2-67	CLEAR WHITE	YELLOW SIDE FACING SOUTH (TOWARD RUNWAY 35 APPROACH)	L-861

TAXI GUIDANCE SIGN SCHEDULE			
SIGN NUMBERS	LOCATION	SIDE A	SIDE B
R1-TGS1	TAXIWAY A INTERSECTION WITH RUNWAY 27 AT HOLD LINE	27	BLANK
R1-TGS2	RUNWAY 27 INTERSECTION WITH RUNWAY 35-17	35-17	BLANK
R1-TGS3	TAXIWAY "TEA CUP" TURNAROUND EAST INTERSECTION WITH RUNWAY 9-27 AT HOLD LINE	9-27	BLANK
R1-TGS4	TAXIWAY "TEA CUP" TURNAROUND WEST INTERSECTION WITH RUNWAY 9-27 AT HOLD LINE	9-27	BLANK
R1-TGS5	RUNWAY 9 INTERSECTION WITH RUNWAY 17-35	17-35	BLANK
R2-TGS1	TAXIWAY A INTERSECTION WITH RUNWAY 35 AT HOLD LINE	35	BLANK
R2-TGS2	RUNWAY 35 INTERSECTION WITH RUNWAY 9-27	9-27	BLANK
R2-TGS3	RUNWAY 17 INTERSECTION WITH RUNWAY 27-9	27-9	BLANK

TAXI GUIDANCE SIGN SCHEDULE

-  TYPE L-858L LOCATION SIGN - YELLOW LEGEND AND BORDER ON A BLACK BACKGROUND
-  TYPE L-858R MANDATORY INSTRUCTION SIGN - BLACK OUTLINE ON OUTSIDE EDGE OF WHITE LEGEND ON A RED BACKGROUND
-  TYPE L-858Y DIRECTION, DESTINATION, AND BOUNDARY SIGN - BLACK LEGEND ON A YELLOW BACKGROUND
-  BLANK - BLACK BACKGROUND


TAXI GUIDANCE SIGN NOTES

- THE PROPOSED TAXI GUIDANCE SIGNS SHALL CONFORM TO ADVISORY CIRCULAR 150/5345 44J (OR LATEST ISSUE IN FORCE) AND BE FAA-APPROVED FOR TYPE L-858Y OR L-858Y(L) DIRECTION, DESTINATION, AND BOUNDARY SIGNS (BLACK LEGEND ON YELLOW BACKGROUND); TYPE L-858R OR L-858R(L) MANDATORY INSTRUCTION SIGN (BLACK OUTLINE ON OUTSIDE EDGE OF WHITE LEGEND ON RED BACKGROUND); AND/OR TYPE L-858L OR L-858L(L) LOCATION SIGN (YELLOW LEGEND AND BORDER ON BLACK BACKGROUND).
- THE SIGNS SHALL BE SIZE 1, 18-IN. SIGN FACE WITH A 12-IN. LEGEND; STYLE 2, POWERED FROM A 4.8 TO 6.6 AMP SERIES LIGHTING CIRCUIT; CLASS 2, FOR OPERATION FROM -40 DEGREES F TO 131 DEGREES F; MODE 2, TO WITHSTAND WIND LOADS OF 200 M.P.H., BASE-MOUNTED, DOUBLE-SIDED, AS SPECIFIED ON THE PLANS.
- THE PROPOSED TAXI GUIDANCE SIGNS SHALL BE LOCATED SUCH THAT THE CLOSEST SIDE OF THE SIGN IS 15' FROM THE PAVEMENT EDGE OR RESPECTIVE RUNWAY SURFACE EDGE.
- ALL PROPOSED TAXI GUIDANCE SIGNS SHALL BE TAGGED BY THE CONTRACTOR IN ACCORDANCE WITH THE SIGN NUMBERS SHOWN ON THESE CONSTRUCTION DRAWINGS.
- THE PROPOSED LIGHTED TAXI GUIDANCE SIGNS WILL BE PAID FOR UNDER THE FOLLOWING ITEMS:
 AR125442 TAXI GUIDANCE SIGN, 2 CHARACTER _____ PER EACH.
 AR125444 TAXI GUIDANCE SIGN, 4 CHARACTER _____ PER EACH.
 AR125445 TAXI GUIDANCE SIGN, 5 CHARACTER _____ PER EACH.

APR 02, 2014 9:12 AM HAGL000382
 pw:\sps-svr206\hanson.dom\hanson_projects\Documents\13\jobs\1340058\1340058D\CAD\Airport\Sheet\C-642-SCHED

CRAWFORD COUNTY AIRPORT ROBINSON CRAWFORD COUNTY, ILLINOIS	S.B.C. PROJ.: 3-17-SBGP-XX ILL. PROJ.: RSY-4334
HANSON Professional Services Inc. 2014 1525 South Sixth Street Springfield, Illinois 62703-2986 Ph: (217) 788-2450 Fax: (217) 788-2503 www.hanson-inc.com Offices Nationwide	REPLACE MIRL AND MITL SYSTEMS AIRFIELD LIGHTING NOTES AND SCHEDULES
27 27 of 48 sheets	

LIGHT LOCATION TABLE					
LIGHT NO.	NORTHING	EASTING	STATION	OFFSET (FT.)	ALIGNMENT
R2-1	856213.0117	1179422.9632	31+29.3	47.50	RUNWAY 17-35
R2-2	856030.3581	1179470.7031	29+40.5	47.60	RUNWAY 17-35
R2-3	855847.6274	1179518.3874	27+51.6	47.50	RUNWAY 17-35
R2-4	855664.8966	1179566.0718	25+62.8	47.50	RUNWAY 17-35
R2-5	855482.1659	1179613.7562	23+73.9	47.50	RUNWAY 17-35
R2-6	855299.4042	1179661.3221	21+85.1	47.50	RUNWAY 17-35
R2-7	855116.7044	1179709.1250	19+96.2	47.50	RUNWAY 17-35
R2-8	854933.9737	1179756.8093	18+07.4	47.50	RUNWAY 17-35
R2-9	854751.2429	1179804.4937	16+18.5	47.50	RUNWAY 17-35
R2-10	854568.4812	1179852.0596	14+29.7	47.50	RUNWAY 17-35
R2-11	854500.0283	1179874.4806	13+57.7	55.5	RUNWAY 17-35
R2-12	854498.6861	1179869.6641	13+57.7	50.5	RUNWAY 17-35
R2-13	854473.9318	1179882.2448	13+30.6	52.53	RUNWAY 17-35
R2-14	854456.6866	1179904.0085	13+08.4	69.24	RUNWAY 17-35
R2-15	854450.1008	1179930.8696	12+95.2	93.56	RUNWAY 17-35
R2-16	854448.8237	1179980.8533	12+81.4	141.60	RUNWAY 17-35
R2-17	854445.9239	1180091.1352	12+50.7	247.58	RUNWAY 17-35
R2-TGS1	854366.5997	1180090.6739	11+74.1	227.10	RUNWAY 17-35
R2-18	854379.3740	1179979.0433	12+14.6	122.31	RUNWAY 17-35
R2-19	854380.4970	1179929.0556	12+28.3	74.23	RUNWAY 17-35
R2-20	854385.0333	1179900.2471	12+40.0	47.50	RUNWAY 17-35
R2-21	854382.5073	1179890.5698	12+40.0	37.50	RUNWAY 17-35
R2-22	854379.9812	1179880.8925	12+40.0	27.50	RUNWAY 17-35
R2-23	854366.0878	1179827.6675	12+40.0	-27.50	RUNWAY 17-35
R2-24	854363.5618	1179817.9902	12+40.0	-37.50	RUNWAY 17-35
R2-25	854361.0357	1179808.3129	12+40.0	-47.50	RUNWAY 17-35
R2-26	854544.5183	1179760.2581	14+29.7	-47.50	RUNWAY 17-35
R2-27	854727.2490	1179712.5737	16+18.5	-47.50	RUNWAY 17-35
R2-28	854909.9798	1179664.8893	18+07.4	-47.50	RUNWAY 17-35
R2-29	855092.7105	1179617.2049	19+96.2	-47.50	RUNWAY 17-35
R2-30	855275.4413	1179569.5205	21+85.1	-47.50	RUNWAY 17-35
R2-31	855458.1720	1179521.8362	23+73.9	-47.50	RUNWAY 17-35
R2-32	855640.9028	1179474.1518	25+62.8	-47.50	RUNWAY 17-35
R2-33	855823.6335	1179426.4674	27+51.6	-47.50	RUNWAY 17-35
R2-34	856006.3642	1179378.7830	29+40.5	-47.50	RUNWAY 17-35
R2-TGS2	856055.9572	1179355.2949	29+94.4	-52.50	RUNWAY 17-35
R2-35	856189.0488	1179331.1617	31+29.3	-47.50	RUNWAY 17-35
R2-36	856451.8017	1179262.5753	34+00.8	-47.50	RUNWAY 17-35
R2-37	856620.9056	1179218.4341	35+75.6	-47.50	RUNWAY 17-35
R2-38	856790.0094	1179174.2929	37+50.4	-47.50	RUNWAY 17-35
R2-39	856959.1133	1179130.1517	39+25.1	-47.50	RUNWAY 17-35
R2-40	857128.2171	1179086.0105	40+99.9	-47.50	RUNWAY 17-35
R2-41	857297.3209	1179041.8693	42+74.7	-47.50	RUNWAY 17-35
R2-42	857465.6227	1178997.9375	44+48.6	-47.50	RUNWAY 17-35
R2-43	857668.7438	1178944.9168	46+58.5	-47.50	RUNWAY 17-35
R2-44	857671.2694	1178954.5926	46+58.5	-37.50	RUNWAY 17-35
R2-45	857673.7951	1178964.2684	46+58.5	-27.50	RUNWAY 17-35
R2-46	857676.3208	1178973.9442	46+58.5	-17.50	RUNWAY 17-35
R2-47	857685.1606	1179007.8094	46+58.5	17.50	RUNWAY 17-35
R2-48	857687.6863	1179017.4852	46+58.5	27.50	RUNWAY 17-35
R2-49	857690.2120	1179027.1610	46+58.5	37.50	RUNWAY 17-35
R2-50	857692.7376	1179036.8368	46+58.5	47.50	RUNWAY 17-35
R2-51	857701.8285	1179071.7172	46+58.5	83.55	RUNWAY 17-35
R2-52	857709.8979	1179102.6515	46+58.5	115.52	RUNWAY 17-35
R2-53	857717.9673	1179133.5858	46+58.5	147.48	RUNWAY 17-35
R2-54	857674.4405	1179144.9401	46+13.5	147.48	RUNWAY 17-35
R2-55	857630.9137	1179156.2944	45+68.6	147.47	RUNWAY 17-35
R2-56	857599.6435	1179131.4121	45+44.6	115.50	RUNWAY 17-35
R2-57	857568.3733	1179106.5299	45+20.6	83.52	RUNWAY 17-35
R2-58	857530.9622	1179088.9036	44+88.9	57.02	RUNWAY 17-35
R2-59	857491.6372	1179097.6100	44+48.6	55.50	RUNWAY 17-35
R2-60	857490.3751	1179092.7719	44+48.6	50.50	RUNWAY 17-35
R2-61	857489.6166	1179089.8575	44+48.6	47.50	RUNWAY 17-35
R2-62	857321.3148	1179133.7893	42+74.7	47.50	RUNWAY 17-35
R2-63	857152.2110	1179177.9305	40+99.9	47.50	RUNWAY 17-35
R2-64	856983.1072	1179222.0717	39+25.1	47.50	RUNWAY 17-35
R2-65	856814.0033	1179266.2129	37+50.4	47.50	RUNWAY 17-35
R2-66	856644.8995	1179310.3541	35+75.6	47.50	RUNWAY 17-35
R2-TGS3	856609.0967	1179329.7357	35+36.1	52.50	RUNWAY 17-35
R2-67	856475.7956	1179354.4953	34+00.8	47.50	RUNWAY 17-35

REVISION DATE	
CRAWFORD COUNTY AIRPORT ROBINSON CRAWFORD COUNTY, ILLINOIS	
ILL. PROJ.: RSY-4334 S.B.C. PROJ.: 3-17-SBGP-XX	
Hanson Proj. No. 13A0058 Filename C-642-SCHED.dwg Scale NOT TO SCALE Date 03/07/14	LAYOUT BAK 08/16/13 DRAWN BAK 08/19/13 REVIEWED CAH 03/07/14
 © Copyright Hanson Professional Services Inc. 2014 Hanson Professional Services Inc. 1525 South Sixth Street Springfield, Illinois 62703-2886 Ph: (217) 788-2450 Fax: (217) 788-2503 www.hanson-inc.com Offices Nationwide	
REPLACE MIRL AND MITL SYSTEMS	LIGHT LOCATION TABLE FOR RUNWAY 17-35 CIRCUIT
29 29 of 48 sheets	

LIGHT LOCATION TABLE

LIGHT NO.	NORTHING	EASTING	STATION	OFFSET (FT.)	ALIGNMENT
T1-1	855269.6087	1180408.0564	12+68.4	70.06	TAXIWAY A
T1-2	855281.1509	1180379.3005	12+79.3	41.05	TAXIWAY A
T1-3	855309.6502	1180368.5574	13+07.5	30.00	TAXIWAY A
T1-4	855359.6380	1180369.6623	13+57.5	30.00	TAXIWAY A
T1-5	855489.9238	1180372.6504	14+87.8	30.00	TAXIWAY A
T1-6	855670.1965	1180376.7851	16+68.1	30.00	TAXIWAY A
T1-7	855850.4675	1180380.9896	18+48.5	30.00	TAXIWAY A
T1-8	856030.9347	1180384.9706	20+29.0	30.00	TAXIWAY A
T1-9	856032.1793	1180324.6707	20+28.9	-30.00	TAXIWAY A
T1-10	855852.1869	1180320.6745	18+48.8	-30.00	TAXIWAY A
T1-11	855671.6601	1180316.4318	16+68.3	-30.00	TAXIWAY A
T1-12	855491.2479	1180312.5438	14+87.8	-30.00	TAXIWAY A
T1-13	855361.0676	1180309.6113	13+57.6	-30.00	TAXIWAY A
T1-14	855311.0803	1180308.4853	13+07.6	-30.00	TAXIWAY A
T1-15	855261.0929	1180307.3593	12+57.6	-30.00	TAXIWAY A
T1-16	855155.4765	1180304.9801	11+51.9	-30.00	TAXIWAY A
T1-17	854999.8526	1180301.4745	10+41.3	-35.00	TAXIWAY A
T1-18	854894.2171	1180299.0949	9+35.67	-35.00	TAXIWAY A
T1-19	854843.0531	1180298.4250	8+84.5	-35.00	TAXIWAY A
T1-20	854754.1776	1180295.9403	7+95.6	-35.00	TAXIWAY A
T1-21	854663.5544	1180294.1506	7+04.9	-35.00	TAXIWAY A
T1-22	854616.0276	1180293.0295	6+57.4	-35.00	TAXIWAY A
T1-23	854568.5008	1180291.9085	6+09.9	-35.00	TAXIWAY A
T1-24	854521.0898	1180290.3297	5+62.4	-35.00	TAXIWAY A
T1-25	854481.7714	1180289.8523	5+23.1	-35.00	TAXIWAY A
T1-26	854453.5192	1180278.1391	4+65.3	-35.00	TAXIWAY A
T1-27	854441.7872	1180249.8574	4+07.7	-35.00	TAXIWAY A
T1-28	854372.8322	1180249.8574	4+07.2	35.00	TAXIWAY A
T1-29	854381.5048	1180291.4014	4+36.5	35.00	TAXIWAY A
T1-30	854405.1282	1180326.5301	4+65.7	35.00	TAXIWAY A
T1-31	854440.2648	1180350.1343	4+94.9	35.00	TAXIWAY A
T1-32	854481.7206	1180358.7228	5+24.8	35.00	TAXIWAY A
T1-33	854520.9245	1180360.4654	5+64.0	35.00	TAXIWAY A
T1-34	854550.0130	1180372.1584	5+93.4	45.97	TAXIWAY A
T1-35	854560.9526	1180400.8966	6+05.0	74.42	TAXIWAY A
T1-36	854559.4107	1180450.9398	6+04.7	124.49	TAXIWAY A
T1-37	854557.4008	1180516.1690	6+04.3	189.75	TAXIWAY A
T1-38	854555.3840	1180581.6264	6+03.9	255.24	TAXIWAY A
T1-39	854553.8441	1180631.6030	6+03.6	305.24	TAXIWAY A
T1-40	854550.6103	1180736.5539	6+03.0	410.24	TAXIWAY A
T1-41	854548.7482	1180796.9897	6+02.6	470.70	TAXIWAY A
T1-42	854545.5079	1180902.1525	6+02.0	575.91	TAXIWAY A
T1-43	854542.2669	1181007.3412	6+01.4	681.15	TAXIWAY A
T1-44	854580.0503	1181008.2077	6+39.1	681.08	TAXIWAY A
T1-45	854617.8004	1181009.0735	6+76.9	681.01	TAXIWAY A
T1-46	854667.7872	1181010.2199	7+26.9	680.92	TAXIWAY A
T1-47	854734.1498	1181011.7419	7+93.3	680.79	TAXIWAY A
T1-48	854800.5035	1181013.1605	8+59.7	680.57	TAXIWAY A
T1-49	854850.5051	1181014.4105	9+09.7	680.58	TAXIWAY A
T1-50	854851.7662	1180959.4250	9+09.6	625.58	TAXIWAY A
T1-51	854801.7622	1180958.2781	8+59.6	625.67	TAXIWAY A
T1-52	854735.4108	1180956.7564	7+93.2	625.80	TAXIWAY A
T1-53	854669.0483	1180955.2344	7+26.8	625.92	TAXIWAY A
T1-54	854619.0614	1180954.0880	6+76.8	626.01	TAXIWAY A
T1-55	854608.5176	1180949.4098	6+66.2	621.59	TAXIWAY A
T1-56	854604.7624	1180938.6407	6+62.1	610.92	TAXIWAY A
T1-57	854605.4968	1180903.4389	6+62.0	575.71	TAXIWAY A
T1-58	854607.1170	1180850.8533	6+62.3	523.10	TAXIWAY A
T1-59	854608.7370	1180798.2760	6+62.6	470.50	TAXIWAY A
T1-60	854610.5749	1180738.6275	6+63.0	410.82	TAXIWAY A
T1-61	854612.1918	1180686.1520	6+63.3	358.32	TAXIWAY A
T1-62	854613.8087	1180633.6765	6+63.6	305.82	TAXIWAY A
T1-63	854615.3485	1180583.6999	6+63.9	255.83	TAXIWAY A
T1-64	854617.3693	1180518.1172	6+64.3	190.21	TAXIWAY A
T1-65	854619.3791	1180452.8880	6+64.7	124.95	TAXIWAY A
T1-66	854620.9190	1180402.9117	6+65.0	74.95	TAXIWAY A
T1-67	854622.1786	1180362.0303	6+65.3	35.00	TAXIWAY A
T1-68	854661.8988	1180362.9631	7+05.0	35.00	TAXIWAY A
T1-69	854752.5139	1180365.0911	7+95.6	35.00	TAXIWAY A
T1-70	854842.9074	1180368.6413	8+86.1	35.00	TAXIWAY A
T1-71	854868.3522	1180380.7410	9+11.8	46.66	TAXIWAY A
T1-72	854879.7440	1180407.6660	9+23.9	73.30	TAXIWAY A
T1-73	854877.6266	1180457.6917	9+23.0	123.36	TAXIWAY A
T1-74	854875.1975	1180586.7399	9+23.8	252.43	TAXIWAY A
T1-75	854871.1433	1180765.7540	9+24.2	431.49	TAXIWAY A
T1-76	854868.2203	1180894.8182	9+24.4	560.59	TAXIWAY A
T1-77	854862.4551	1180955.2740	9+20.2	621.17	TAXIWAY A
T1-78	854867.0882	1180944.8054	9+24.5	610.59	TAXIWAY A

REVISION

DATE

CRAWFORD COUNTY AIRPORT
ROBINSON
CRAWFORD COUNTY, ILLINOIS

IL. PROJ.: RSY-4334 S.B.C. PROJ.: 3-17-SBGP-XX

Hanson Proj. No. 13A0058

Filename C-642-SCHED.dwg

Scale NOT TO SCALE

Date 03/07/14

LAYOUT BAK 08/16/13

DRAWN BAK 08/19/13

REVIEWED CAH 03/07/14

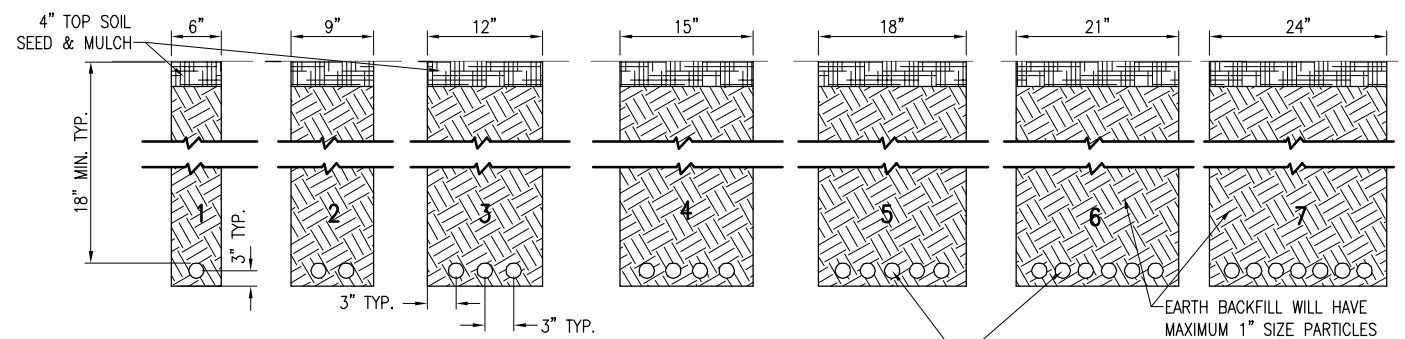


© Copyright Hanson Professional Services Inc. 2014
Hanson Professional Services Inc.
1525 South Sixth Street
Springfield, Illinois 62703-2886
Ph: (217) 788-2450 Fax: (217) 788-2503
www.hanson-inc.com
Offices Nationwide

REPLACE MIRL AND
MITL SYSTEMS

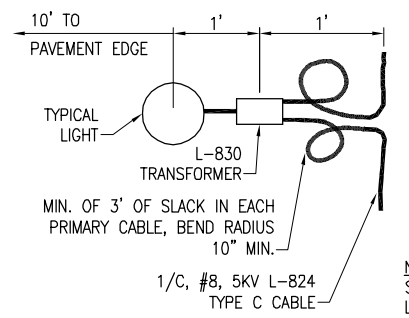
LIGHT LOCATION TABLE FOR
TAXIWAYS

30



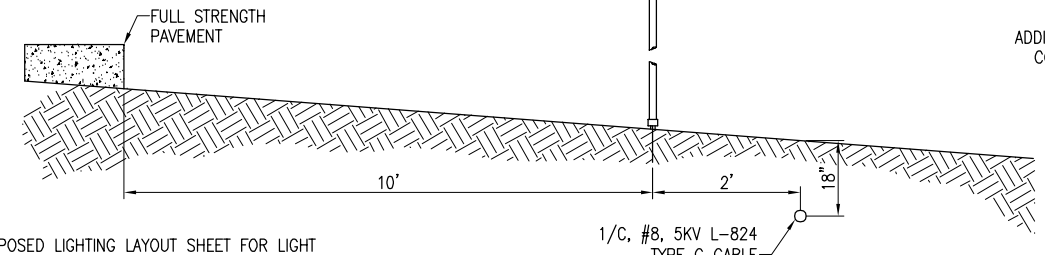
- NOTES:**
1. DETAIL NUMBERS INDICATE NO. OF CABLES.
 2. TRENCHES WITH MORE THAN SEVEN CABLES SHALL BE INCREASED 3" IN WIDTH FOR EACH ADDITIONAL CABLE; IF SPECIFIED ON PLANS TWO PARALLEL TRENCHES MAY BE CONSTRUCTED.
 3. DEPTH OF TRENCHES SHALL BE AS SHOWN ABOVE UNLESS OTHERWISE SPECIFIED ON THE PLANS. MINIMUM COVER REQUIREMENTS FOR CABLES AND DUCTS AT AIRPORT RUNWAYS AND ADJACENT AREAS WHERE TRESPASSING IS PROHIBITED IS 18 INCHES PER NEC 300.5 AND 300.50. COVER IS DEFINED AS THE SHORTEST DISTANCE IN INCHES MEASURED BETWEEN A POINT ON THE TOP SURFACE OF ANY DIRECT-BURIED CONDUCTOR, CABLE, CONDUIT, OR OTHER RACEWAY AND THE TOP SURFACE OF FINISHED GRADE, CONCRETE OR SIMILAR COVER.
 4. ALL DISTURBED SURFACES SHALL BE RESTORED TO THEIR ORIGINAL CONDITION. COST IS INCIDENTAL TO TRENCH.

CABLE TRENCHES
(NOT TO SCALE)



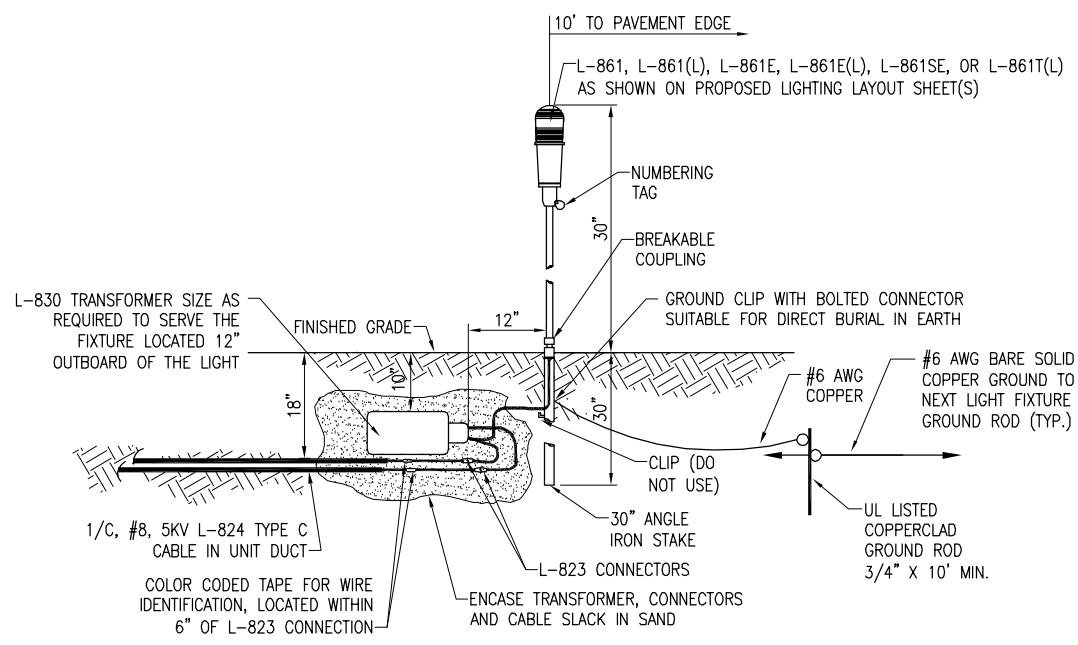
PLAN VIEW

PER FAA AC 150/5340-30G DESIGN AND INSTALLATION DETAILS FOR AIRPORT VISUAL AIDS, A LIGHT BASE GROUND MUST BE INSTALLED AT EACH LIGHT FIXTURE. A LIGHT BASE GROUND SHALL BE INSTALLED AT EACH STAKE MOUNTED LIGHT AND EACH TRANSFORMER BASE/LIGHT CAN ASSOCIATED WITH RUNWAY LIGHTS, TAXIWAY LIGHTS, AND LIGHTED TAXI GUIDANCE SIGNS. THE LIGHT BASE GROUND SHALL BE A #6 AWG BARE COPPER CONDUCTOR CONNECTED TO THE GROUND LUG ON THE RESPECTIVE L-867 TRANSFORMER BASE/LIGHT CAN OR MOUNTING STAKE AND A 3/4-INCH DIAMETER BY 10-FOOT LONG (MINIMUM) UL LISTED COPPER CLAD GROUND ROD.

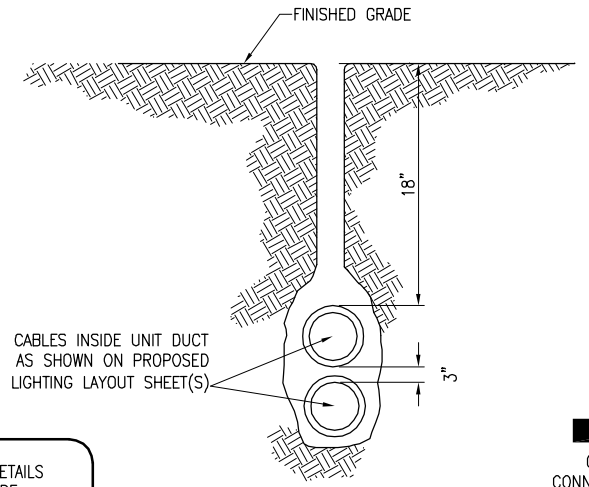


PROFILE VIEW

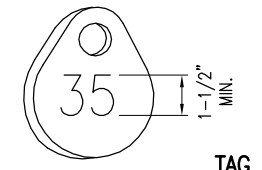
LIGHT AND CABLE INSTALLATION DETAIL
(NOT TO SCALE)



MEDIUM INTENSITY LIGHT - STAKE MOUNTED
(NOT TO SCALE)

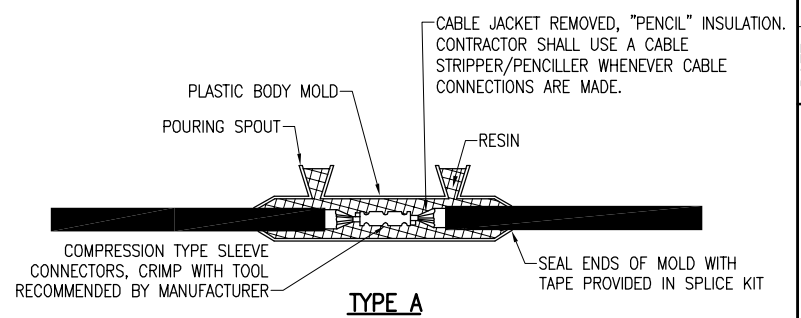


PLOWED CABLE
(NOT TO SCALE)



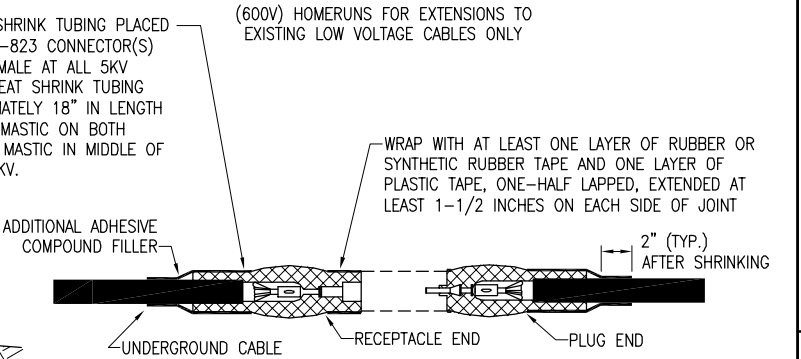
TAG DETAIL
(NOT TO SCALE)

NOTE:
AFFIX NON-CORROSIVE TAG TO FIXTURE FACING RUNWAY WITH SET SCREW, WIRE TIE, OR METAL BAND. NUMERALS SHALL BE ENGRAVED FOR PERMANENT READABILITY.



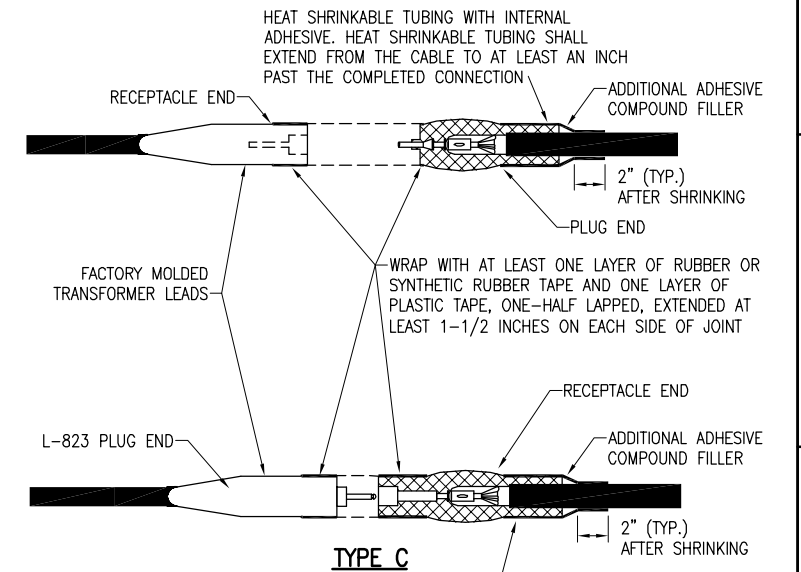
TYPE A

FOR SPLICES IN LOW VOLTAGE CABLE (600V) HOMERUNS FOR EXTENSIONS TO EXISTING LOW VOLTAGE CABLES ONLY



TYPE B

FOR SPLICES AT JUNCTION OF HOMERUN WITH LOOP CIRCUIT AND FOR SPLICES IN HOMERUNS TO EXISTING CABLES



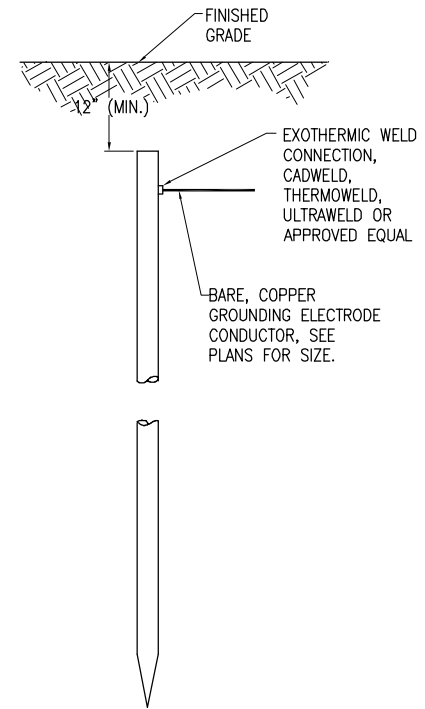
TYPE C

FOR SPLICES AT RUNWAY AND TAXIWAY LIGHTS

NOTES:
SEE PROPOSED LIGHTING LAYOUT SHEET(S) FOR SPLICE TYPE.

INSIDE DIAMETER OF CONNECTOR SHALL PROPERLY MATCH THE OUTSIDE DIAMETER OF CABLE.

CABLE SPLICES
(NOT TO SCALE)



GROUND ROD
(NOT TO SCALE)

NOTES:
TYPE AND MINIMUM NUMBER OF GROUND RODS SHALL BE AS SPECIFIED ON THE PLAN.
THE RESISTANCE TO GROUND OF THE GROUNDING SYSTEM SHALL NOT EXCEED 25 OHMS.
COST OF GROUND RODS IS INCIDENTAL TO THE ASSOCIATED ITEMS REQUIRING GROUNDING UNLESS OTHERWISE SPECIFIED.

REVISION	
DATE	

CRAWFORD COUNTY AIRPORT
ROBINSON
CRAWFORD COUNTY, ILLINOIS

Hanson Proj. No. 13A0058	FILENAME E-501-ELEC.dwg	SCALE NOT TO SCALE	DATE 03/07/14
LAYOUT	KNL	08/16/13	
DRAWN	BAK	08/19/13	
REVIEWED	KNL/CAH	03/07/14	

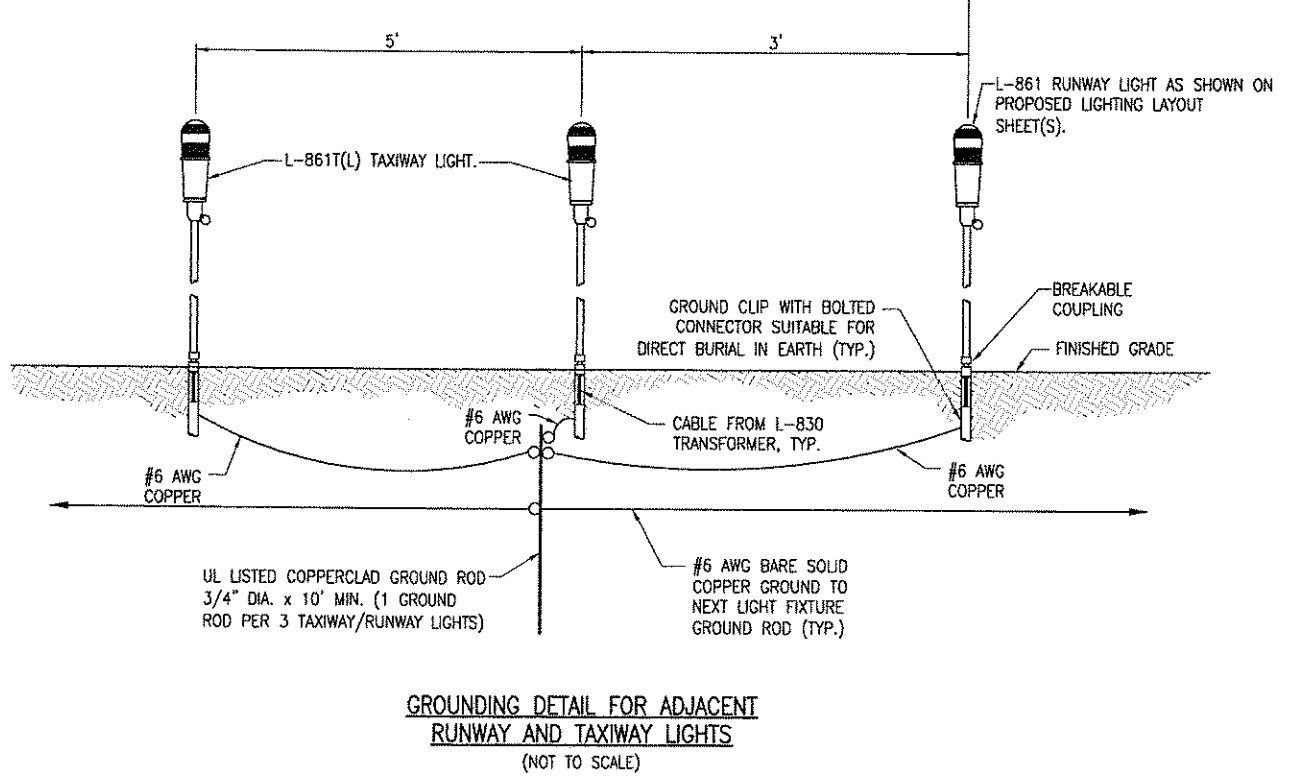
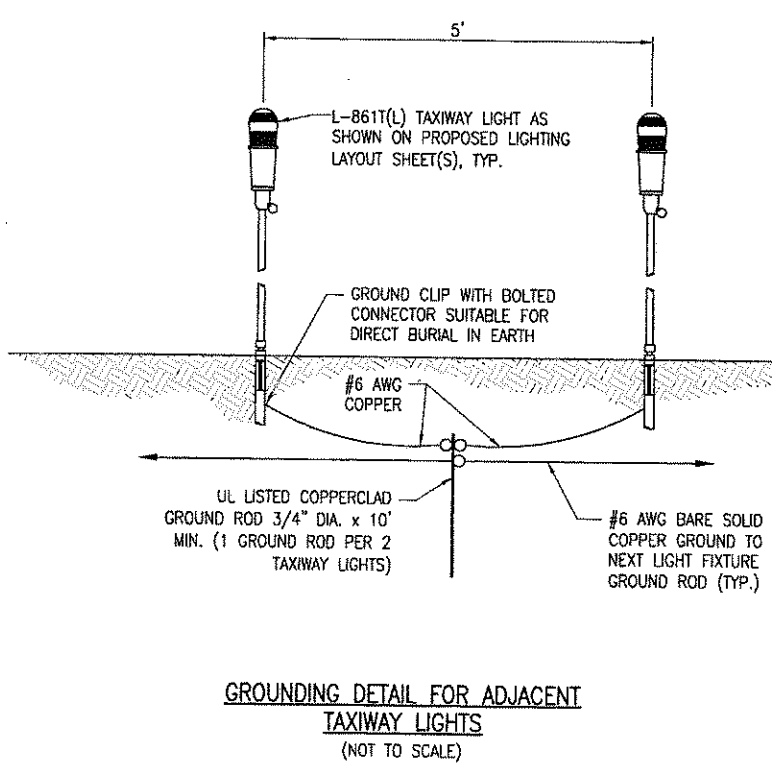
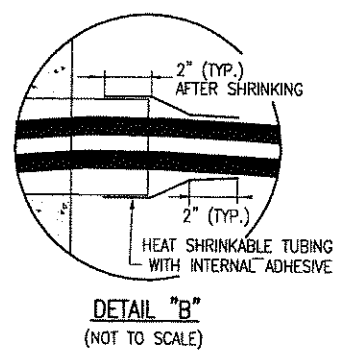
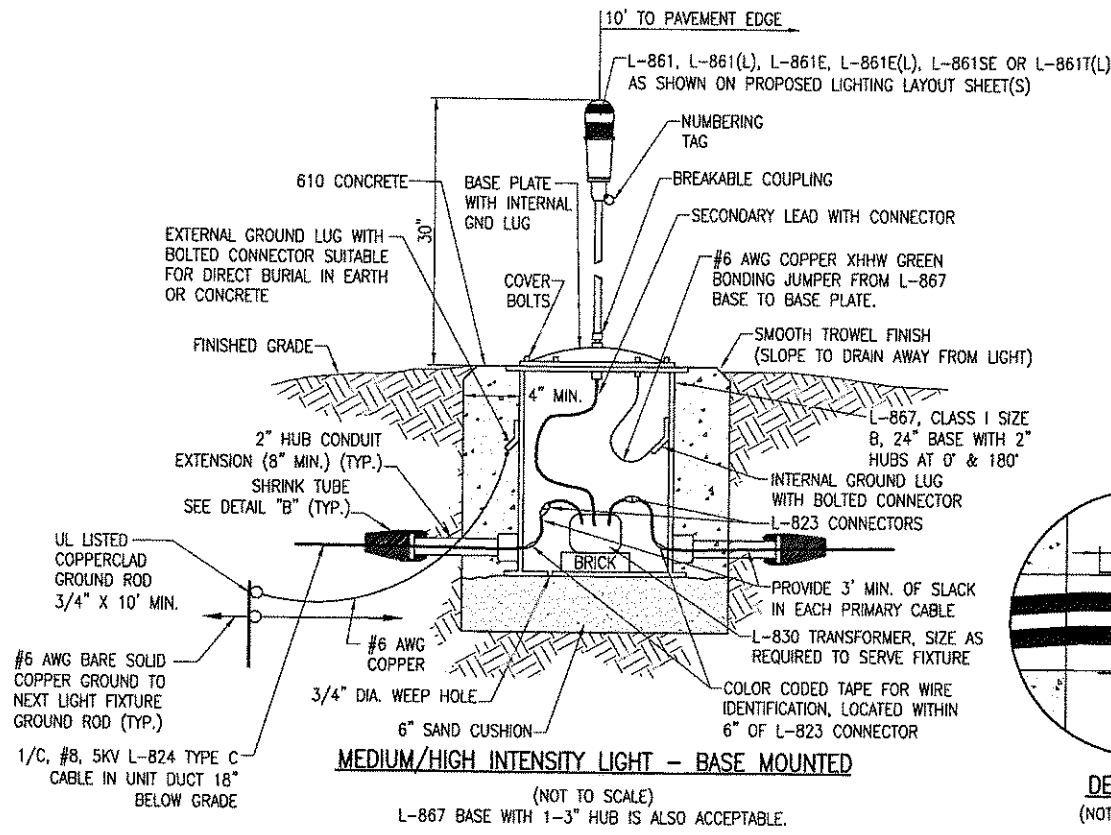
HANSON
Professional Services Inc. 2014
1525 South Sixth Street
Springfield, Illinois 62705-2986
Ph: (217) 788-2450 Fax: (217) 788-2503
www.hanson-inc.com
Offices Nationwide

REPLACE MRL AND
MITL SYSTEMS
ELECTRICAL DETAILS
SHEET 1

APR 01, 2014 2:25 PM SCHW01296
pw:\sgr-sv\306\hanson\Documents\13jobs\13A0058\CAD\Airport\Sheet\E-501-ELEC

NOTES

- GROUNDING FOR RUNWAY LIGHTS, TAXIWAY LIGHTS, AND LIGHTED TAXI GUIDANCE SIGNS SHALL BE AS DETAILED ON THE PLANS AND AS SPECIFIED HEREIN. PER FAA AC 150/5340-30G DESIGN AND INSTALLATION DETAILS FOR AIRPORT VISUAL AIDS, CHAPTER 12, PART 12.6; A GROUND MUST BE INSTALLED AT EACH LIGHT FIXTURE. THE PURPOSE OF THE LIGHT BASE GROUND IS TO PROVIDE A DEGREE OF PROTECTION FOR MAINTENANCE PERSONNEL FROM POSSIBLE CONTACT WITH AN ENERGIZED LIGHT BASE OR MOUNTING STAKE THAT MAY RESULT FROM A SHORTED POWER CABLE OR ISOLATION TRANSFORMER. A LIGHT BASE GROUND SHALL BE INSTALLED AT EACH TRANSFORMER BASE/LIGHT CAN ASSOCIATED WITH RUNWAY LIGHTS, TAXIWAY LIGHTS, AND LIGHTED TAXI GUIDANCE SIGNS. A LIGHT BASE GROUND SHALL ALSO BE INSTALLED AT EACH STAKE MOUNTED LIGHT FIXTURE. A LIGHT BASE GROUND SHALL BE INSTALLED AND CONNECTED TO THE METAL FRAME OF EACH TAXI GUIDANCE SIGN AS DETAILED ON THE PLANS AND IN ACCORDANCE WITH THE RESPECTIVE TAXI GUIDANCE SIGN MANUFACTURER RECOMMENDATIONS. THE LIGHT BASE GROUND SHALL BE A #6 AWG BARE COPPER CONDUCTOR BONDED TO THE GROUND LUG ON THE RESPECTIVE L-867 TRANSFORMER BASE/LIGHT CAN OR MOUNTING STAKE AND A 3/4-INCH DIAMETER BY 10-FOOT LONG (MINIMUM) UL LISTED COPPER CLAD GROUND ROD. CONNECTIONS TO GROUND LUGS ON THE L-867 TRANSFORMER BASE/LIGHT CAN OR MOUNTING STAKE SHALL BE WITH A UL LISTED GROUNDING CONNECTOR SUITABLE FOR DIRECT BURIAL IN EARTH OR CONCRETE. CONNECTIONS TO GROUND RODS SHALL BE MADE WITH EXOTHERMIC WELD TYPE CONNECTORS, CADWELD BY ERICO PRODUCTS, INC., SOLON, OHIO, (PHONE: 800-248-9353), THERMOWELD BY CONTINENTAL INDUSTRIES, INC., TULSA, OKLAHOMA (PHONE: 918-663-1440), ULTRAWELD BY HARGER, GRAYSLAKE, ILLINOIS (PHONE: 800-842-7437), OR APPROVED EQUAL. EXOTHERMIC WELD CONNECTIONS SHALL BE INSTALLED IN CONFORMANCE WITH THE RESPECTIVE MANUFACTURER'S DIRECTIONS USING MOLDS AS REQUIRED FOR EACH RESPECTIVE APPLICATION. BOLTED CONNECTIONS WILL NOT BE PERMITTED AT GROUND RODS. TOP OF GROUND RODS SHALL BE BURIED 12 INCHES MINIMUM BELOW GRADE, UNLESS SPECIFIED OTHERWISE HEREIN, FOR RESPECTIVE APPLICATIONS
- FOR BASE MOUNTED LIGHT FIXTURES THE LIGHT FIXTURE MUST BE BONDED TO THE LIGHT BASE INTERNAL GROUND LUG VIA A #6 AWG STRANDED COPPER WIRE RATED FOR 600 VOLTS WITH GREEN XHHW OR USE INSULATION. THE GROUND WIRE LENGTH MUST BE SUFFICIENT TO ALLOW THE REMOVAL OF THE LIGHT FIXTURE FROM THE LIGHT BASE FOR ROUTINE MAINTENANCE. SEE THE LIGHT FIXTURE MANUFACTURER'S INSTRUCTIONS FOR PROPER METHODS OF ATTACHING A BONDING WIRE.
- FURNISH AND INSTALL A #6 AWG BARE SOLID COPPER GROUND AND BOND IT TO EACH GROUND ROD AT THE RESPECTIVE AIRFIELD LIGHT FIXTURES AND TAXI GUIDANCE SIGNS. THE #6 AWG GROUND SHALL BE DIRECT BURIAL IN TRENCH APPROXIMATELY 12 TO 18 INCHES BELOW GRADE. THE GROUND CONDUCTOR MAY BE INSTALLED ABOVE THE #8 FAA L-824, 5000-VOLT CABLE IN UNIT DUCT OR IN AN ADJACENT TRENCH. THE #6 AWG GROUND SHALL BE CONNECTED TO EACH RESPECTIVE GROUND ROD WITH AN EXOTHERMIC WELD CONNECTION. THE COMPLETED GROUND WIRE INSTALLED WILL PROVIDE A GROUND RING SYSTEM FOR THE RESPECTIVE AIRFIELD LIGHTING CIRCUIT. THE GROUND WIRE WILL NOT BE INSTALLED WITH THE HOMERUN CABLES FOR THE RESPECTIVE AIRFIELD LIGHTING CIRCUIT BACK TO THE VAULT. THIS IS TO HELP ACCOMPLISH A GROUNDING RESISTANCE OF 25 OHMS OR LESS FOR THE GROUND ROD AT EACH LIGHT PER THE REQUIREMENTS IN FAA AC 150/5340-30G. THE #6 AWG BARE SOLID COPPER GROUND WILL BE PAID FOR UNDER ITEM AR108756 1/C #6 GROUND PER LINEAR FOOT.
- FOR TAXIWAY LIGHTS THAT ARE SPACED WITH LESS THAN 10 FEET OF SEPARATION BETWEEN THEM PROVIDE ONE 3/4-INCH DIAMETER BY 10-FOOT LONG GROUND ROD PER TWO ADJACENT TAXIWAY LIGHTS.
- STEEL USED TO MANUFACTURE GROUND RODS SHALL BE 100% DOMESTIC STEEL.
- FOR EACH GROUNDING ELECTRODE SYSTEM, THE CONTRACTOR SHALL TEST THE MADE ELECTRODE GROUND SYSTEM WITH AN INSTRUMENT SPECIFICALLY DESIGNED FOR TESTING GROUNDING SYSTEMS. TEST RESULTS SHALL BE RECORDED FOR EACH GROUNDING ELECTRODE SYSTEM. IF GROUND RESISTANCE EXCEEDS 25 OHMS, CONTACT THE PROJECT ENGINEER FOR FURTHER DIRECTION. COPIES OF THE GROUND SYSTEM TEST RESULTS SHALL BE FURNISHED TO THE RESIDENT ENGINEER/RESIDENT PROJECT REPRESENTATIVE.



REVISION	DATE

CRAWFORD COUNTY AIRPORT
ROBINSON
CRAWFORD COUNTY, ILLINOIS

IL PROJ.: RSV-4334 S.B.G. PROJ.: J-17-SBGP-XX

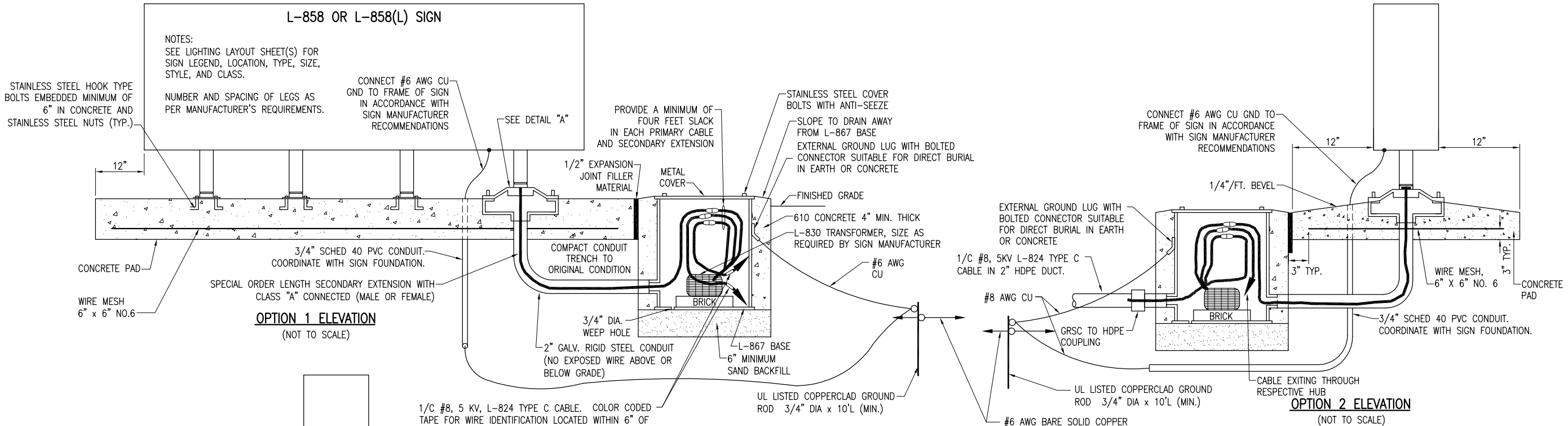
Hanson Proj. No. 13A0058	Revision	08/16/13
Filename: E-502-ELEC.dwg	Scale	NOT TO SCALE
Sheet	DATE	03/07/14
LAYOUT	KNL	08/16/13
DRAWN	BHK	08/19/13
REVIEWED	CAH/KNL	03/07/14

HANSON
Professional Services Inc. 2014
Hanson Professional Services Inc.
1525
Springfield, Illinois 62703-2986
Ph: (217) 798-2460 Fax: (217) 786-2803
www.hanson-inc.com
Offices Nationwide

REPLACE MRL AND MITL SYSTEMS

ELECTRICAL DETAILS SHEET 2

MAR 31, 2014 8:24 AM KNC000394
pvc:\app-svc\306.hanson.com\hanson_projects\Documents\13A0058\CAD\Airport\Sheet\E-502-ELEC



NOTES:
SEE LIGHTING LAYOUT SHEET(S) FOR SIGN LEGEND, LOCATION, TYPE, SIZE, STYLE, AND CLASS.
NUMBER AND SPACING OF LEGS AS PER MANUFACTURER'S REQUIREMENTS.

CONNECT #6 AWG CU GND TO FRAME OF SIGN IN ACCORDANCE WITH SIGN MANUFACTURER RECOMMENDATIONS

PROVIDE A MINIMUM OF FOUR FEET SLACK IN EACH PRIMARY CABLE AND SECONDARY EXTENSION

STAINLESS STEEL COVER BOLTS WITH ANTI-SEEZE
SLOPE TO DRAIN AWAY FROM L-867 BASE
EXTERNAL GROUND LUG WITH BOLTED CONNECTOR SUITABLE FOR DIRECT BURIAL IN EARTH OR CONCRETE

CONNECT #6 AWG CU GND TO FRAME OF SIGN IN ACCORDANCE WITH SIGN MANUFACTURER RECOMMENDATIONS

3/4" SCHED 40 PVC CONDUIT. COORDINATE WITH SIGN FOUNDATION.
SPECIAL ORDER LENGTH SECONDARY EXTENSION WITH CLASS "A" CONNECTED (MALE OR FEMALE)

1/2" EXPANSION JOINT FILLER MATERIAL
METAL COVER
FINISHED GRADE
610 CONCRETE 4" MIN. THICK
L-830 TRANSFORMER, SIZE AS REQUIRED BY SIGN MANUFACTURER
#6 AWG CU
COMPACT CONDUIT TRENCH TO ORIGINAL CONDITION
BRICK
L-867 BASE
6" MINIMUM SAND BACKFILL

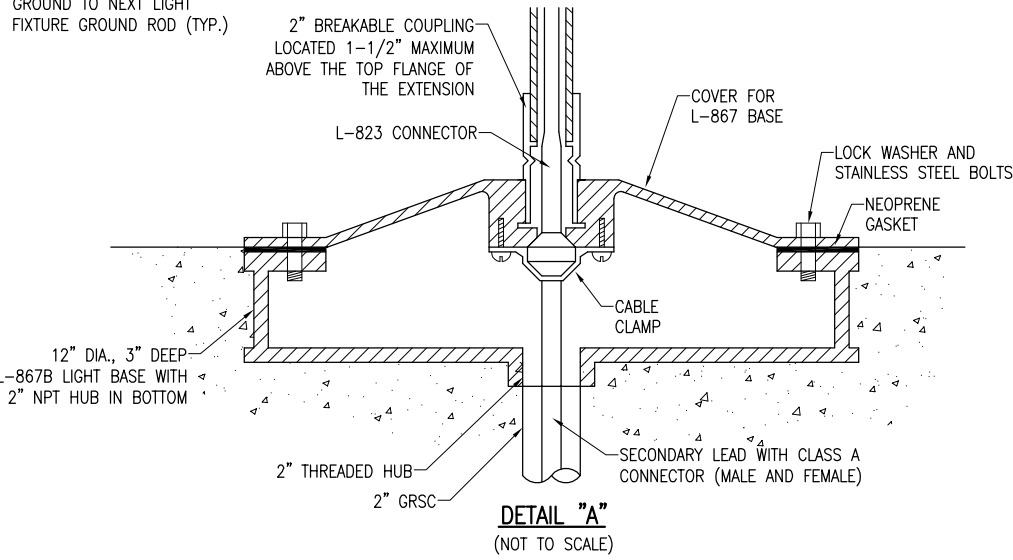
EXTERNAL GROUND LUG WITH BOLTED CONNECTOR SUITABLE FOR DIRECT BURIAL IN EARTH OR CONCRETE
1/4" #8, 5KV L-824 TYPE C CABLE IN 2" HDPE DUCT.
#8 AWG CU
GRSC TO HDPE COUPLING
UL LISTED COPPERCLAD GROUND ROD 3/4" DIA x 10'L (MIN.)
#6 AWG BARE SOLID COPPER GROUND TO NEXT LIGHT FIXTURE GROUND ROD (TYP.)

1/4" /FT. BEVEL
3" TYP.
WIRE MESH, 6" X 6" NO. 6
CONCRETE PAD
3/4" SCHED 40 PVC CONDUIT. COORDINATE WITH SIGN FOUNDATION.

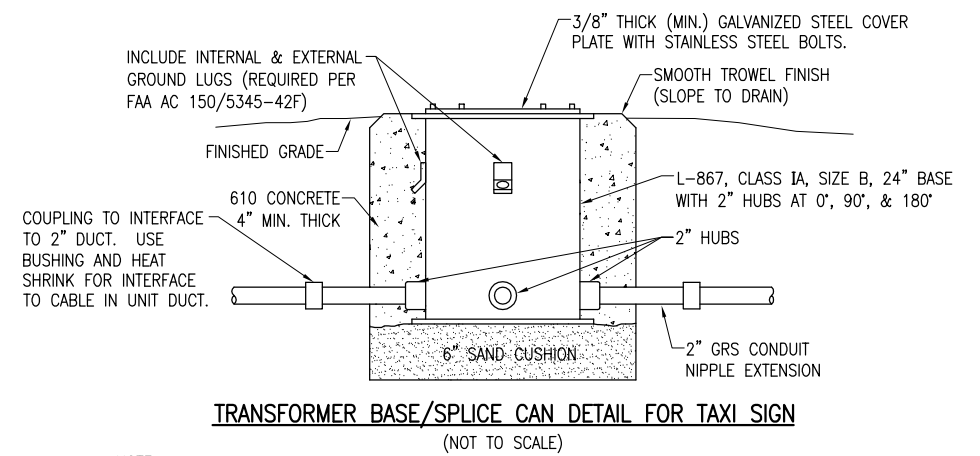
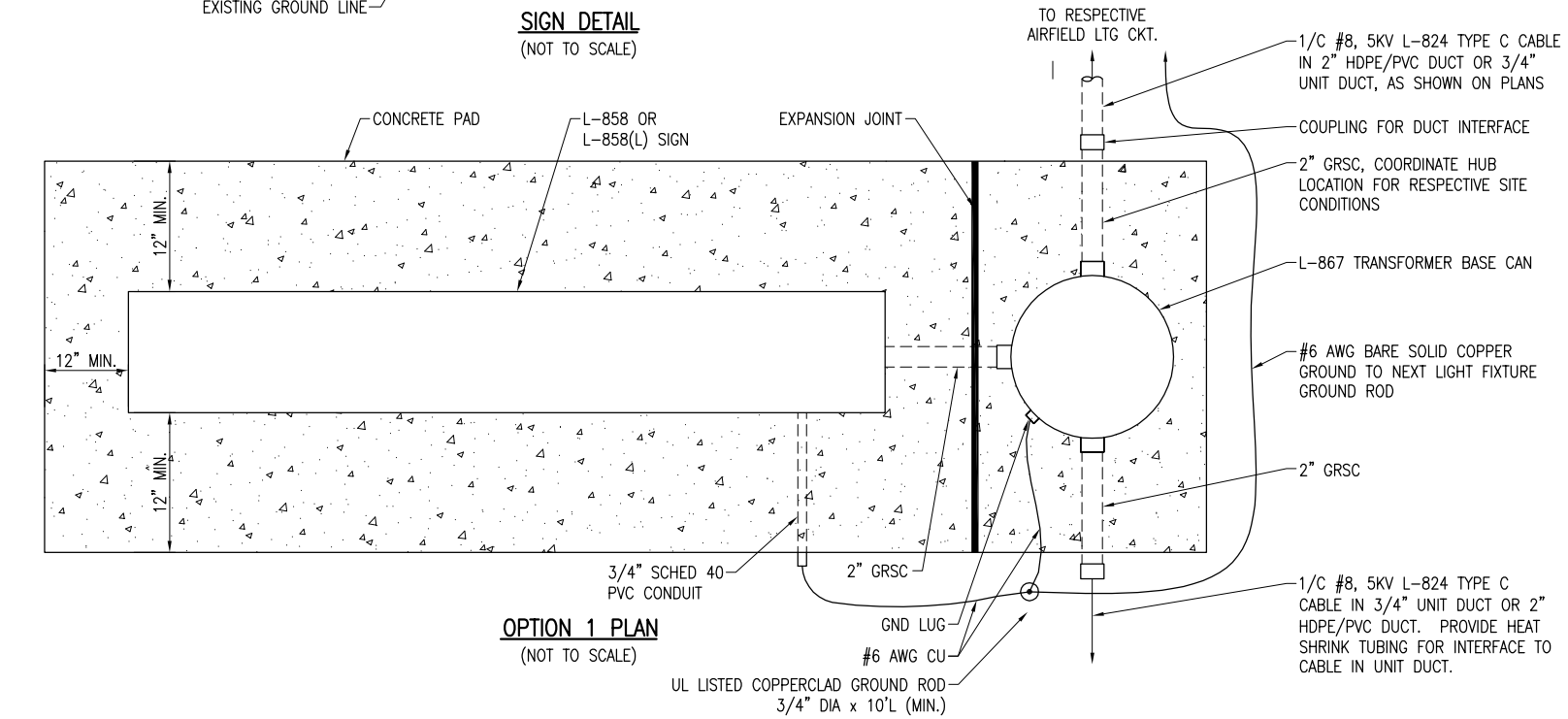
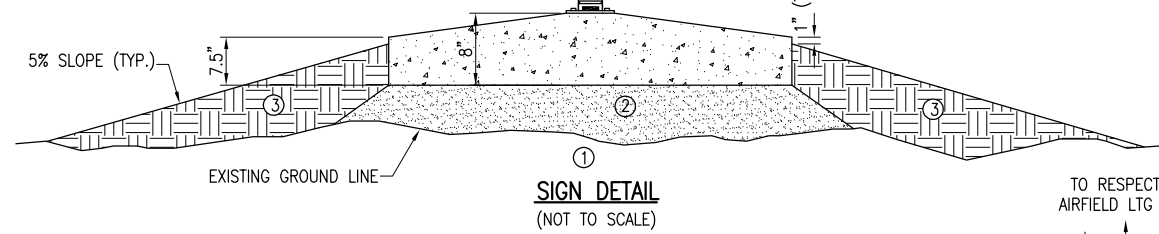
1/2" #8, 5 KV, L-824 TYPE C CABLE. COLOR CODED TAPE FOR WIRE IDENTIFICATION LOCATED WITHIN 6" OF L-823 CONNECTOR. SEE PLAN VIEW FOR CABLE ENTRANCE & EXIT.

GENERAL NOTES
PER FAA AC 150/5340-30G DESIGN AND INSTALLATION DETAILS FOR AIRPORT VISUAL AIDS, A LIGHT BASE GROUND MUST BE INSTALLED AT EACH LIGHT FIXTURE. A LIGHT BASE GROUND SHALL BE INSTALLED AT EACH STAKE MOUNTED LIGHT AND EACH TRANSFORMER BASE/LIGHT CAN ASSOCIATED WITH RUNWAY LIGHTS, TAXIWAY LIGHTS, AND LIGHTED TAXI GUIDANCE SIGNS. THE LIGHT BASE GROUND SHALL BE A #6 AWG BARE COPPER CONDUCTOR CONNECTED TO THE GROUND LUG ON THE RESPECTIVE L-867 TRANSFORMER BASE/LIGHT CAN, TAXI SIGN FRAME, OR MOUNTING STAKE AND A 3/4-INCH DIAMETER BY 10-FOOT LONG (MINIMUM) UL LISTED COPPER CLAD GROUND ROD. ALSO BOND THE SIGN FRAME TO THE GROUND ROD WITH A #6 AWG BARE COPPER CONDUCTOR.

- SEE LIGHTING LAYOUT SHEET FOR SIGN LEGEND, LOCATION, TYPE, SIZE, STYLE, AND CLASS.
- SEE ELECTRICAL NOTES SHEETS.



- EXISTING SOD TO BE STRIPPED AND REMOVED
- SAND BACKFILL, VARIABLE DEPTH
- PROPOSED TOPSOIL BACKFILL MATERIAL



NOTE:
FOR THE PURPOSE OF ENHANCING SAFETY, EACH BASE MUST HAVE INSTALLED, BY THE MANUFACTURER, AN INTERNAL AND EXTERNAL GROUND STRAP THAT IS AVAILABLE FOR THE PURPOSE OF ATTACHING A GROUND LUG THAT IS CONNECTED TO AN EARTH GROUND OR A SAFETY GROUND CONDUCTOR INSTALLED WITH THE RESPECTIVE CIRCUIT. FOR AIRPORT PROJECTS RECEIVING FEDERAL FUNDS THIS REQUIREMENT IS MANDATORY PER FAA AC 150/5345-42F.

REVISION	DATE

CRAWFORD COUNTY AIRPORT
ROBINSON
CRAWFORD COUNTY, ILLINOIS

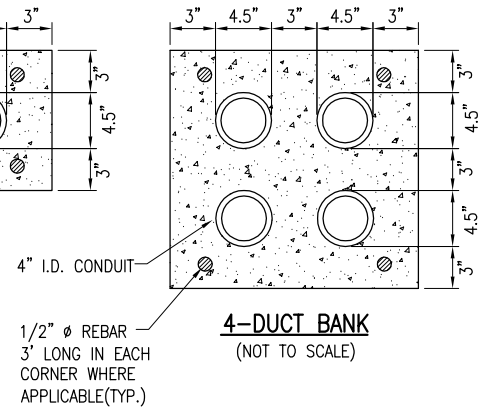
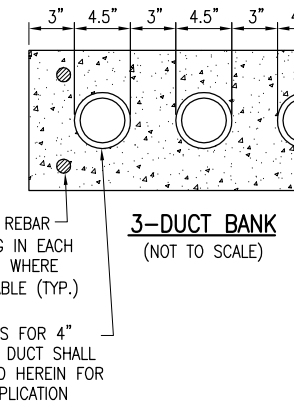
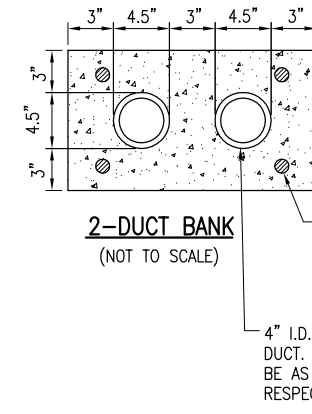
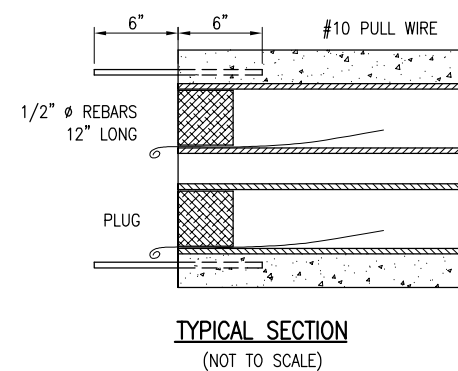
IL PROJ.: RSY-4334
S.B.C. PROJ.: 3-17-SBGP-XX

Hanson Proj. No. 13A0058	FILENAME E-503-ELEC.dwg	Scale NOT TO SCALE	Date 03/07/14
LAYOUT	KNL	08/16/13	
DRAWN	BAK	08/19/13	
REVIEWED	CAH/KNL	03/07/14	

HANSON
Professional Services Inc. 2014
1525 South Sixth Street
Springfield, Illinois 62703-2986
Ph: (217) 788-2450 Fax: (217) 788-2503
www.hanson-inc.com
Offices Nationwide

REPLACE MRL AND MITL SYSTEMS
ELECTRICAL DETAILS SHEET 3

MAR 25, 2014, 1:57 PM HAGL000382
pw:\sps-svr306\hanson\Documents\13\jobs\13A0058\13A0058D\CAD\Airport\Sheet\E-503-ELEC

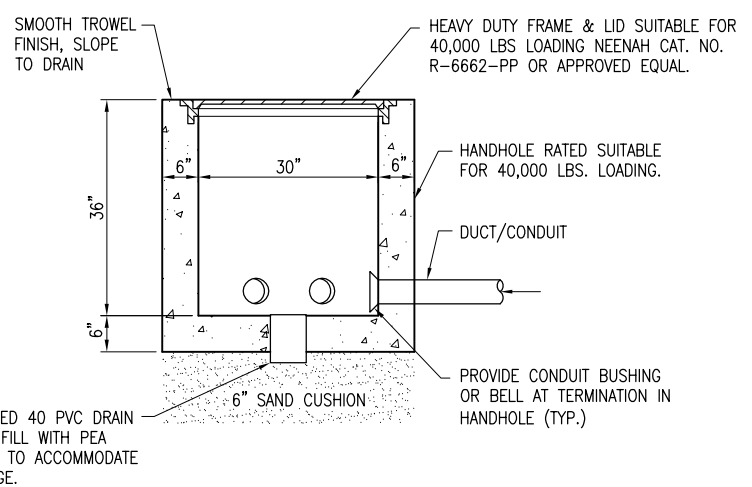
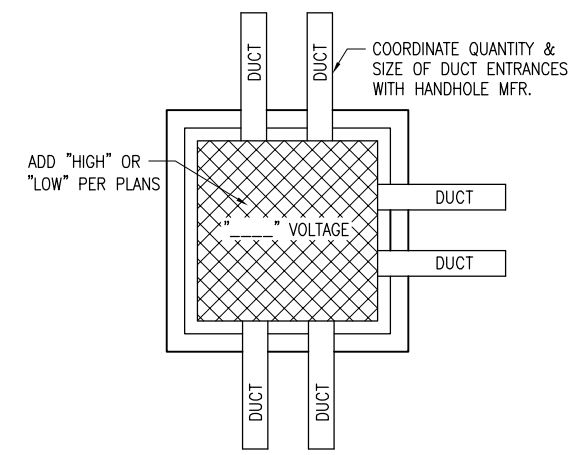


TYPICAL SECTION
(NOT TO SCALE)

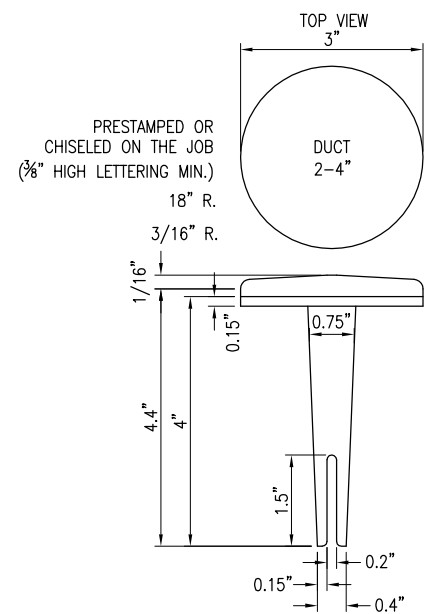
2-DUCT BANK
(NOT TO SCALE)

3-DUCT BANK
(NOT TO SCALE)

4-DUCT BANK
(NOT TO SCALE)

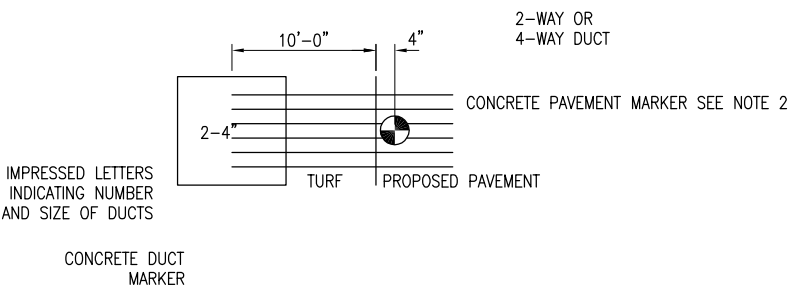


ELECTRICAL HANDHOLE
(NOT TO SCALE)



BITUMINOUS PAVEMENT DUCT MARKERS
(NOT TO SCALE)

- NOTES:
1. TOP OF MARKER SHALL BE FLUSH WITH FINISHED PAVEMENT SURFACE. MARKER MAY BE INSTALLED IN A DRILLED HOLE AND SECURED WITH EPOXY GLUE.
 2. BRASS DUCT MARKERS ARE AVAILABLE FROM G&S FOUNDRY & MANUFACTURING CO., INC., 210 KASKASKIA DRIVE, RED BUD, IL 62278, PHONE: (618)-282-4114



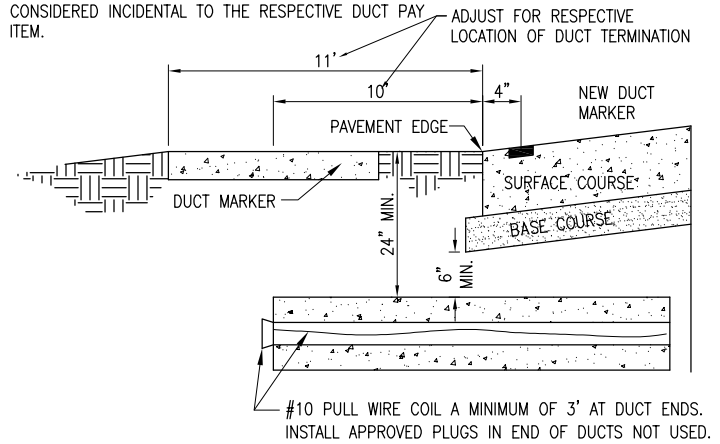
DUCT MARKER DETAIL
(NOT TO SCALE)

DUCT BANK NOTES:

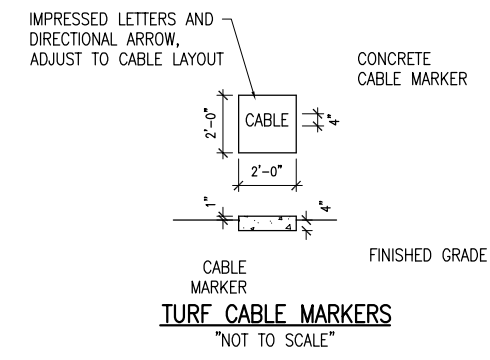
1. DIMENSIONS FOR CONCRETE COVERAGE AND SEPARATION BETWEEN DUCTS ARE MINIMUM.
2. INCLUDE DUCT SPACERS AS MANUFACTURED BY UNDERGROUND DEVICES INC., OR APPROVED EQUAL TO MAINTAIN PROPER SEPARATION OF CONDUITS.
3. PROVIDE REBAR WHERE APPLICABLE TO ACCOMMODATE INTERFACE OF CONCRETE ENCASED DUCT BANKS TERMINATING IN HANDHOLE. PROVIDE REBAR WHERE APPLICABLE TO EXTEND AN EXISTING CONCRETE ENCASED DUCT BANK. REBAR SHALL CONFORM TO THE REQUIREMENTS OF ASTM A 706, GRADE 60.
4. CONDUITS FOR CONCRETE ENCASED DUCT SHALL BE SCHEDULE 40 PVC CONFORMING TO ITEM 110.
5. MINIMUM DEPTH OF TOP OF DUCT ENCASEMENT SHALL BE 18" BELOW FINISHED GRADE.
6. HIGH VOLTAGE AND LOW VOLTAGE CIRCUITS SHALL NOT BE INSTALLED IN THE SAME RACEWAY, CONDUIT, DUCT, HANDHOLE, OR MANHOLE.
7. HOMERUN CABLES FOR A RESPECTIVE CIRCUIT SHALL BE INSTALLED IN THE SAME RACEWAY OR DUCT.
8. DUCT INTERFACE TO HANDHOLES OR MANHOLES WILL BE CONSIDERED INCIDENTAL TO THE RESPECTIVE DUCT PAY ITEM.

CABLE & DUCT MARKER NOTES:

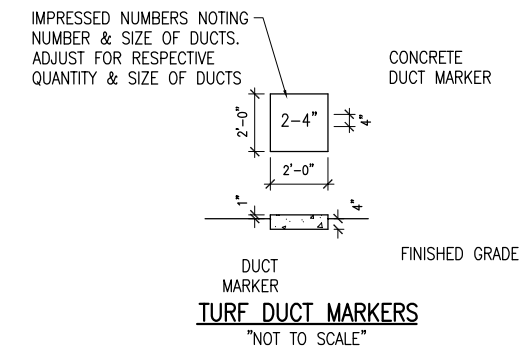
1. THE COST OF ALL TURF AND PAVEMENT DUCT MARKERS SHALL BE INCIDENTAL TO THE DUCT. THE COST OF ALL CABLE MARKERS SHALL BE INCIDENTAL TO THE CABLE.
2. BITUMINOUS PAVEMENT DUCT MARKER AND CONCRETE DUCT MARKER TO BE PROVIDED AT EACH END OF EACH DUCT AS SHOWN ON THE LOCATION PLAN. FOR CONCRETE PAVEMENT, THE LETTER "D" SHALL BE IMPRESSED IN THE PAVEMENT INSTEAD OF THE MARKER. THE LETTER SHALL BE FORMED AS DESCRIBED IN NOTE 4.
3. CABLE MARKERS SHALL BE PLACED AT CHANGES OF DIRECTION AND APPROXIMATELY EVERY 200' ALONG CABLE RUNS.
4. CONCRETE CABLE MARKERS AND DUCT MARKERS SHALL HAVE LETTERS 4" HIGH, 3" WIDE WITH WIDTH OF STROKE 1/2" AND 1/4" DEEP. ALL LETTERS, NUMBERS AND ARROWS TO BE IMPRESSED.
 - A. REDUCE LETTER SIZE TO 3" HIGH, 2" WIDE.
 - B. INCREASE THE MARKER SIZE TO 30" X 30".
 - C. PROVIDE ADDITIONAL MARKERS PLACED SIDE BY SIDE.
5. EMPLOY THE FOLLOWING METHODS WERE ADDITIONAL SPACE TO FIT LEGEND IS REQUIRED:



UNDERGROUND ELECTRICAL DUCT
(NOT TO SCALE)



TURF CABLE MARKERS
(NOT TO SCALE)



TURF DUCT MARKERS
(NOT TO SCALE)

NOTES:

1. LIDS FOR LOW VOLTAGE HANDHOLES SHALL BE LABELED "LOW VOLTAGE". LIDS FOR HIGH VOLTAGE HANDHOLES SHALL BE LABELED "HIGH VOLTAGE". COORDINATE LETTERING WITH MFR.
2. HANDHOLES MAY BE CAST IN PLACE OR PRECAST. PRECAST MANUFACTURERS MUST BE ON THE IDOT (ILLINOIS DEPT. OF TRANSPORTATION) APPROVED LIST OF CERTIFIED PRECAST CONCRETE PRODUCERS.
3. ALL CORING, INTERFACE, AND LABOR ASSOCIATED WITH CONDUIT, DUCT, CABLE IN UNIT DUCT, AND / OR CABLE ENTRIES WILL BE CONSIDERED INCIDENTAL TO THE INSTALLATION OF THE HANDHOLE AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

REVISION	
DATE	
CRAWFORD COUNTY AIRPORT ROBINSON CRAWFORD COUNTY, ILLINOIS	
S.B.G. PROJ.: 3-17-SBGP-XX	

Hanson Proj. No. 13A0058	FILENAME E-504-ELEC.dwg
Scale NOT TO SCALE	DATE 03/07/14
LAYOUT KNL 08/16/13	DRAWN BAK 08/19/13
REVIEWED CAH/KNL 03/07/14	

HANSON
Professional Services Inc. 2014
1525 South Sixth Street
Springfield, Illinois 62703-2886
Ph: (217) 788-2450 Fax: (217) 788-2503
www.hanson-inc.com
Offices Nationwide

REPLACE MRL AND MITL SYSTEMS
ELECTRICAL DETAILS SHEET 4

MAR 25, 2014, 1:58 PM HAGL000382 p:\s\svr306\hanson\dom\hanson\Projects\Documents\13\jobs\13A0058\13A0058D\CAD\Airport\Sheet\E-504-ELEC

GENERAL NOTES

- 1. ALL ELECTRICAL EQUIPMENT SHALL BE INSTALLED IN CONFORMANCE WITH NFPA 70 - NATIONAL ELECTRICAL CODE (NEC) MOST CURRENT ISSUE IN FORCE, THE RESPECTIVE EQUIPMENT MANUFACTURER'S DIRECTIONS AND ALL OTHER APPLICABLE LOCAL CODES, LAWS, ORDINANCES, AND REQUIREMENTS IN FORCE. ANY INSTALLATIONS WHICH VOID THE U.L. LISTING, ETL LISTING (OR OTHER THIRD PARTY LISTING) AND/OR THE MANUFACTURER'S WARRANTY OF A DEVICE WILL NOT BE PERMITTED.
2. CONTRACTOR SHALL KEEP A COPY OF THE LATEST NEC IN FORCE ON SITE AT ALL TIMES DURING CONSTRUCTION FOR USE AS A REFERENCE.
3. CONTRACTOR SHALL COORDINATE WORK AND ANY POWER OUTAGES AND/OR SHUT DOWN OF SYSTEMS WITH THE RESPECTIVE FACILITY OWNER PERSONNEL AND THE AIRPORT MANAGER/DIRECTOR. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
4. THE CONTRACTOR SHALL ASCERTAIN THAT ALL LIGHTING SYSTEM COMPONENTS FURNISHED BY HIM, INCLUDING FAA APPROVED EQUIPMENT, ARE COMPATIBLE IN ALL RESPECTS WITH EACH OTHER AND THE REMAINDER OF THE NEW/EXISTING SYSTEM. ANY NONCOMPATIBLE COMPONENTS FURNISHED BY THIS CONTRACTOR SHALL BE REPLACED BY HIM AT NO ADDITIONAL COST TO THE AIRPORT SPONSOR WITH A SIMILAR UNIT, APPROVED BY THE ENGINEER (DIFFERENT MODEL OR DIFFERENT MANUFACTURER) THAT IS COMPATIBLE WITH THE REMAINDER OF THE AIRPORT LIGHTING SYSTEM.
5. IN CASE THE CONTRACTOR ELECTS TO FURNISH AND INSTALL AIRPORT LIGHTING EQUIPMENT REQUIRING ADDITIONAL WIRING, TRANSFORMERS, ADAPTORS, MOUNTINGS, ETC., TO THOSE SHOWN ON THE DRAWINGS AND/OR LISTED IN THE SPECIFICATION, ANY COST FOR THESE ITEMS SHALL BE INCIDENTAL TO THE EQUIPMENT COST.
6. THE CONTRACTOR INSTALLED EQUIPMENT (INCLUDING FAA APPROVED) SHALL NOT GENERATE ANY ELECTROMAGNETIC INTERFERENCE IN THE EXISTING AND/OR NEW COMMUNICATIONS, WEATHER, AIR NAVIGATION, AND AIR TRAFFIC CONTROL EQUIPMENT. ANY EQUIPMENT GENERATING SUCH INTERFERENCE SHALL BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST WITH THE EQUIPMENT MEETING THE APPLICABLE SPECIFICATIONS AND NOT GENERATING ANY INTERFERENCE.
7. WHEN A SPECIFIC TYPE, STYLE, CLASS, ETC. OF FAA APPROVED EQUIPMENT IS SPECIFIED ONLY THAT TYPE, STYLE, CLASS, WILL BE ACCEPTABLE, EVEN THOUGH EQUIPMENT OF OTHER TYPES STYLES, CLASSES, ETC. MAY BE APPROVED.
8. ANY AND ALL INSTRUCTIONS FROM THE RESIDENT ENGINEER/RESIDENT PROJECT REPRESENTATIVE TO THE CONTRACTOR REGARDING CHANGES IN OR DEVIATIONS FROM THE PLANS AND SPECIFICATIONS SHALL BE IN WRITING WITH COPIES SENT TO THE AIRPORT SPONSOR AND THE ILLINOIS DEPARTMENT OF TRANSPORTATION DIVISION OF AERONAUTICS. THE CONTRACTOR SHALL NOT ACCEPT ANY VERBAL INSTRUCTIONS FROM THE RESIDENT ENGINEER/RESIDENT PROJECT REPRESENTATIVE REGARDING ANY CHANGES FROM THE PLANS AND SPECIFICATIONS.
9. A MINIMUM OF THREE COPIES OF THE INSTRUCTION BOOK SHALL BE SUPPLIED WITH EACH DIFFERENT TYPE OF EQUIPMENT. THE BOOKS DESCRIBING A MORE SOPHISTICATED TYPE OF EQUIPMENT, SUCH AS REGULATORS, PAPI, REIL, ETC. AS A MINIMUM SHALL CONTAIN THE FOLLOWING:
A. A DETAILED DESCRIPTION OF THE OVERALL EQUIPMENT AND ITS INDIVIDUAL COMPONENTS.
B. THEORY OF OPERATION INCLUDING THE FUNCTION OF EACH COMPONENT.
C. INSTALLATION INSTRUCTION.
D. START-UP INSTRUCTIONS.
E. PREVENTATIVE MAINTENANCE REQUIREMENTS.
F. CHART FOR TROUBLE-SHOOTING.
G. COMPLETE POWER AND CONTROL DETAILED WIRING DIAGRAM(S), SHOWING EACH CONDUCTOR/CONNECTION/COMPONENT - "BLACK" BOXES ARE NOT ACCEPTABLE. THE DIAGRAM OF THE NARRATIVE SHALL SHOW VOLTAGE/CURRENTS/WAVE SHAPES AT STRATEGIC LOCATIONS TO BE USED WHEN CHECKING AND/OR TROUBLE-SHOOTING THE EQUIPMENT. WHEN THE EQUIPMENT HAS SEVERAL MODES OF OPERATION, SUCH AS SEVERAL BRIGHTNESS STEPS, THESE PARAMETERS SHALL BE INDICATED FOR ALL DIFFERENT MODES.
H. PARTS LIST WHICH WILL INCLUDE ALL MAJOR AND MINOR COMPONENTS SUCH AS RESISTORS, DIODES, ETC. IT SHALL INCLUDE A COMPLETE NOMENCLATURE OF EACH COMPONENT AND, IF APPLICABLE, THE NAME OF ITS MANUFACTURER AND THE CATALOG NUMBER.
I. SAFETY INSTRUCTIONS.

POWER AND CONTROL NOTES

- 1. PROVIDE LEGEND PLATES FOR ALL ELECTRICAL EQUIPMENT TO IDENTIFY FUNCTION, CIRCUIT VOLTAGE AND PHASE. WHERE THE EQUIPMENT CONTAINS FUSES, ALSO IDENTIFY THE FUSE OR FUSE LINK AMPERE RATING. WHERE THE EQUIPMENT DOES NOT HAVE SUFFICIENT AREA TO INSTALL LEGEND PLATES, THE LEGEND PLATES SHALL BE INSTALLED ON THE WALL NEXT TO THE UNIT. LEGEND PLATES SHALL BE WEATHERPROOF ENGRAVED PLASTIC OR PHENOLIC MATERIAL, 1/4" HIGH BLACK LETTERS ON A WHITE BACKGROUND UNLESS NOTED OTHERWISE. SECURE WITH WEATHERPROOF ADHESIVE AND MACHINE SCREWS. FURNISH ADDITIONAL LEGEND PLATES WHERE REQUIRED BY CODE, FOR ADDITIONAL EQUIPMENT, AS DETAILED HEREIN ON THE PLANS, AND AS NOTED IN THE SPECIAL PROVISION SPECIFICATIONS.
2. COLOR CODE ALL PHASE WIRING BY THE USE OF COLORED WIRE INSULATION AND/OR COLORED TAPE. WHERE TAPE IS USED, THE WIRE INSULATION SHALL BE BLACK. BLACK AND RED SHALL BE USED FOR PHASE CONDUCTORS ON 120/240VAC SINGLE-PHASE, THREE WIRE SYSTEMS AND BLACK, ORANGE (FOR HIGH LEG) AND BLUE SHALL BE USED FOR PHASE CONDUCTORS ON 240/120VAC THREE-PHASE, FOUR WIRE SYSTEMS. NEUTRAL CONDUCTORS, SIZE NO. 6 AWG OR SMALLER, SHALL BE IDENTIFIED BY A CONTINUOUS WHITE OR NATURAL GRAY OUTER FINISH ALONG ITS ENTIRE LENGTH. NEUTRAL CONDUCTORS LARGER THAN NO. 6 AWG SHALL BE IDENTIFIED EITHER BY A CONTINUOUS WHITE OR NATURAL GRAY OUTER FINISH ALONG ITS ENTIRE LENGTH OR BY THE USE OF WHITE TAPE AT ITS TERMINATIONS AND INSIDE ACCESSIBLE WIREWAYS. INSULATED GROUND CONDUCTORS SHALL HAVE GREEN COLORED INSULATION FOR ALL CONDUCTOR SIZES (AWG OR KCMIL).
3. ALL BRANCH CIRCUIT CONDUCTORS CONNECTED TO A PARTICULAR PHASE SHALL BE IDENTIFIED WITH THE SAME COLOR. THE COLOR CODING SHALL BE EXTENDED TO THE POINT OF UTILIZATION.
4. IN CONTROL WIRING THE SAME COLOR SHALL BE USED THROUGHOUT THE SYSTEM FOR THE SAME FUNCTION, SUCH AS 10%, 30%, 100% BRIGHTNESS CONTROL, ETC.
5. LOW VOLTAGE (600 V.) AND HIGH VOLTAGE (5000 V.) CONDUCTORS SHALL BE INSTALLED IN SEPARATE WIREWAYS.
6. NEATLY LACE WIRING IN DISTRIBUTION PANELS, WIREWAYS, SWITCHES AND JUNCTION/PULL BOXES.
7. THE MINIMUM SIZE OF PULL/JUNCTION BOXES, REGARDLESS OF THE QUANTITY AND SIZE OF THE CONDUCTORS SHOWN, SHALL BE AS FOLLOWS:
A. IN STRAIGHT PULLS THE LENGTH OF THE BOX SHALL NOT BE LESS THAN EIGHT TIMES THE TRADE DIAMETER OF THE LARGER CONDUIT. THE TOTAL AREA (INCLUDING THE CONDUIT CROSS-SECTIONAL AREA) OF A BOX END SHALL BE AT LEAST 3 TIMES GREATER THAN THE TOTAL TRADE CROSS-SECTIONAL AREA OF THE CONDUITS TERMINATING AT THE END.
B. IN ANGLE PULLS OR 'U' PULLS THE DISTANCE BETWEEN EACH CONDUIT ENTRY INSIDE THE BOX AND THE OPPOSITE WALL OF THE BOX SHALL NOT BE LESS THAN SIX (6) TIMES THE TRADE DIAMETER OF THE LARGEST CONDUIT. THIS DISTANCE SHALL BE INCREASED FOR ADDITIONAL ENTRIES BY THE AMOUNT OF THE SUM OF THE DIAMETERS OF ALL OTHER CONDUIT ENTRIES ON THE SAME WALL AS THE BOX. THE DISTANCE BETWEEN CONDUIT ENTRIES ENCLOSING THE SAME CONDUCTOR SHALL NOT BE LESS THAN SIX TIMES THE TRADE DIAMETER OF THE LARGEST CONDUIT.
8. A RUN OF CONDUIT BETWEEN TERMINATIONS AT EQUIPMENT ENCLOSURES, SQUARE DUCTS AND PULL/JUNCTION BOXES, SHALL NOT CONTAIN MORE THAN THE EQUIVALENT OF FOUR QUARTER BENDS (360 DEGREES TOTAL), INCLUDING THOSE BENDS LOCATED IMMEDIATELY AT THE TERMINATIONS, CAST, CONDUIT TYPE OUTLETS SHALL NOT BE TREATED AS PULL/JUNCTION BOXES.
9. EQUIPMENT CABINETS SHALL NOT BE USED AS PULL/JUNCTION BOXES. ONLY WIRING TERMINATING AT THE EQUIPMENT SHALL BE BROUGHT INTO THESE ENCLOSURES.
10. SPLICES AND JUNCTION POINTS SHALL BE PERMITTED ONLY IN JUNCTION BOXES, DUCTS EQUIPPED WITH REMOVABLE COVERS, AND AT EASILY ACCESSIBLE LOCATIONS.
11. CIRCUIT BREAKERS IN POWER DISTRIBUTION PANEL(S) SHALL BE THERMAL-MAGNETIC MOLDED CASE, PERMANENT TRIP WITH 100 AMPERE, MINIMUM FRAME.
12. DUAL LUGS SHALL BE USED WHERE TWO (2) WIRES, SIZE NO. 6 OR LARGER, ARE TO BE CONNECTED TO THE SAME TERMINAL.
13. ALL INTERIOR WALL MOUNTED EQUIPMENT ENCLOSURES SHALL BE MOUNTED ON HOT DIPPED GALVANIZED STEEL STRUT SUPPORT, OR STAINLESS STEEL STRUT SUPPORT, WITH CORROSION RESISTANT HARDWARE.
14. SUPPORT FOR EXTERIOR MOUNTED EQUIPMENT SHALL USE HOT DIPPED GALVANIZED STEEL STRUT SUPPORT OR STAINLESS STEEL STRUT SUPPORT WITH STAINLESS STEEL HARDWARE. PROVIDE ZINC RICH PAINT APPLIED TO FIELD CUTS OF GALVANIZED STEEL SUPPORT TO MINIMIZE THE POTENTIAL FOR CORROSION PER THE RESPECTIVE STRUT SUPPORT MANUFACTURER'S RECOMMENDATIONS.
15. CONDUITS FOR ELECTRIC SERVICE ENTRANCE AND FEEDERS SHALL BE AS DETAILED HEREIN ON THE PLANS. WHERE GALVANIZED RIGID STEEL CONDUIT IS SPECIFIED IT SHALL HAVE THREADED FITTINGS. SET SCREW TYPE FITTINGS WILL NOT BE ACCEPTABLE. CONDUITS FOR UNDERGROUND APPLICATIONS SHALL BE AS DETAILED HEREIN. CONDUITS FOR GROUNDING ELECTRODE CONDUCTORS OR INDIVIDUAL GROUNDING CONDUCTORS SHALL BE SCHEDULE 40 OR SCHEDULE 80 PVC.
16. PROVIDE LIQUID TIGHT FLEXIBLE METAL CONDUIT AT CONNECTIONS TO EQUIPMENT SUBJECT TO VIBRATION OR WHERE FLEXIBILITY IS REQUIRED. LIQUID TIGHT FLEXIBLE METAL CONDUIT AND ASSOCIATED FITTINGS SHALL BE U.L. LISTED TO MEET THE REQUIREMENTS OF NEC 350.6, SUITABLE FOR GROUNDING, SUNLIGHT RESISTANT, AND RESISTANT TO OIL, GASOLINE, AND GREASE. LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS USED FOR FLEXIBILITY (INCLUDING CONNECTIONS TO MOTORS, TRANSFORMERS, & CONSTANT CURRENT REGULATORS) SHALL REQUIRE AN EXTERNAL BONDING JUMPER OR INTERNAL EQUIPMENT GROUNDING CONDUCTOR PER NEC 350.60. DO NOT INSTALL LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS NOT UL LISTED. CONFIRM LIQUID-TIGHT FLEXIBLE METAL CONDUIT BEARS THE UL LABEL PRIOR TO INSTALLING IT.
17. UNLESS OTHERWISE SHOWN, ALL EXPOSED CONDUITS SHALL BE RUN PARALLEL TO OR AT RIGHT ANGLES WITH THE LINES OF THE STRUCTURE.
18. ALL STEEL CONDUITS, FITTINGS, NUTS, BOLTS, ETC. SHALL BE GALVANIZED.
19. USE CONDUIT BUSHINGS AT EACH CONDUIT TERMINATION. WHERE NO. 4 AWG OR LARGER UNDERGROUND WIRE IS INSTALLED, USE INSULATED BUSHINGS.
20. USE DOUBLE LOCK NUTS AT EACH CONDUIT TERMINATION.
21. WRAP ALL PRIMARY AND SECONDARY POWER TRANSFORMER CONNECTIONS WITH SUFFICIENT LAYERS OF INSULATING TAPE (3M SCOTCH 23 ALL-VOLTAGE SPLICING TAPE, 3M SCOTCH 130C LINERLESS RUBBER SPLICING TAPE, OR APPROVED EQUAL) AND COVER WITH VINYL ELECTRICAL TAPE (3M SCOTCH 88 VINYL ELECTRICAL TAPE OR APPROVED EQUAL) FOR FULL VALUE OF CABLE INSULATION VOLTAGE.
22. UNLESS OTHERWISE NOTED, ALL SINGLE CONDUCTOR CONTROL WIRING SHALL BE NO. 12 AWG. COPPER MINIMUM.
23. THE FOLLOWING SHALL APPLY TO RELAY/CONTACTOR PANELS/ENCLOSURES:
A. FOR INTERIOR LOCATIONS ALL COMPONENTS SHALL BE MOUNTED IN NEMA 12 (DUST TIGHT) ENCLOSURE(S) WITH VERTICALLY HINGED COVERS. FOR EXTERIOR/OUTDOOR LOCATIONS ALL COMPONENTS SHALL BE MOUNTED IN NEMA 4X STAINLESS STEEL ENCLOSURE(S) WITH VERTICALLY HINGED COVERS. ALL CONDUIT ENTRIES INTO NEMA 4, 4X ENCLOSURES SHALL HAVE NEMA 4 HUBS LISTED SUITABLE FOR THE RESPECTIVE ENCLOSURE TO MAINTAIN THE NEMA 4, 4X RATING OF THE ENCLOSURE.
B. THE ENCLOSURE(S) SHALL HAVE AMPLE SPACE FOR THE CIRCUIT COMPONENTS, TERMINAL BLOCKS AND INCOMING AND INTERNAL WIRING.
C. ALL CONTROL CONDUCTOR TERMINATIONS SHALL BE OF THE OPEN-EYE CONNECTOR/SCREW TYPE. SOLDERED CLOSED-EYE TERMINATIONS, OR TERMINATIONS WITHOUT CONNECTORS ARE NOT ACCEPTABLE.
D. WHEN THE ENCLOSURE COVER IS OPENED, ALL CIRCUIT COMPONENTS, WIRING AND TERMINALS SHALL BE EXPOSED AND ACCESSIBLE WITHOUT REMOVAL OF ANY PANELS, COVERS, ETC., EXCEPT THOSE COVERING HIGH VOLTAGE COMPONENTS.
E. ACCESS TO, OR REMOVAL OF A CIRCUIT COMPONENT OR TERMINAL BLOCK WILL NOT REQUIRE THE REMOVAL OF ANY OTHER CIRCUIT COMPONENT OR TERMINAL BLOCK.
F. EACH CIRCUIT COMPONENT SHALL BE CLEARLY IDENTIFIED INDICATING ITS CORRESPONDING NUMBER SHOWN ON THE DRAWINGS AND ITS FUNCTION.
G. A COMPLETE WIRING DIAGRAM SHALL BE MOUNTED ON THE INSIDE OF THE COVER. THE DIAGRAM SHALL REPRESENT EACH CONDUCTOR BY A SEPARATE LINE.
H. THE DIAGRAM SHALL IDENTIFY EACH CIRCUIT COMPONENT AN NUMBERING AND COLOR OF EACH TERMINAL CONDUCTOR AND TERMINAL.
I. ALL WIRING SHALL BE NEATLY TRAINED AND LACED.
J. MINIMUM WIRE SIZE SHALL BE NO. 12 AWG.
24. FURNISH & INSTALL A WEATHERPROOF WARNING LABEL FOR EACH METER SOCKET, SERVICE DISCONNECT, SAFETY SWITCH, CUTOUT, PANELBOARD, & CONTROL PANEL TO WARN PERSONS OF POTENTIAL ELECTRIC ARC FLASH HAZARDS, PER THE REQUIREMENTS OF NEC 110.16 "FLASH PROTECTION".

REVISION table with columns for revision number, date, and description.

CRAWFORD COUNTY AIRPORT ROBINSON CRAWFORD COUNTY, ILLINOIS

Table with columns for drawing status: LAYOUT, DRAWN, REVIEWED, KNL, BAK, CAH/KNL and dates: 08/16/13, 08/19/13, 03/07/14.

HANSON Professional Services Inc. logo and contact information: 1525 South Sixth Street, Springfield, Illinois 62703-2986. Ph: (217) 788-2450 Fax: (217) 788-2903 www.hanson-inc.com Offices Nationwide

REPLACE MRL AND MITL SYSTEMS ELECTRICAL NOTES SHEET 1

Vertical text on the left margin: MAR 25, 2014 1:47 PM HAGL000382 p:\s\spi-svr206\hanson.com\hanson_projects\Documents\13\jobs\13A0058\13A0058D\CAD\Wiporth\Sheet\E-001-ELEC


AIRFIELD LIGHTING NOTES

- UNLESS OTHERWISE NOTED, ALL UNDERGROUND AIRFIELD LIGHTING SERIES CIRCUIT CONDUCTORS WHETHER DEB OR IN DUCT/CONDUIT SHALL BE FAA APPROVED 5000 VOLT L-824 TYPE. ALL UNDERGROUND FIELD POWER LOW VOLTAGE (600 VOLT & BELOW) CIRCUIT CONDUCTORS WHETHER DEB OR IN DUCT/CONDUIT SHALL BE UL LISTED 600 VOLT, TYPE XLP-USE-2 COPPER CONDUCTORS. CONDUCTOR SIZES SHALL BE AS SPECIFIED, HEREIN.
- NO COMPONENTS OF PRIMARY CIRCUIT SUCH AS CABLE, CONNECTORS AND TRANSFORMERS SHALL BE BROUGHT ABOVE GROUND AT EDGE LIGHTS, SIGNS, REIL, PAPI, ETC.
- THERE SHALL BE NO EXPOSED POWER/CONTROL CABLES BETWEEN THE POINT WHERE THEY LEAVE THE UNDERGROUND (DEB OR L-867 BASES) AND WHERE THEY ENTER THE EQUIPMENT (SUCH AS TAXIWAY SIGNS, PAPI, REIL, ETC.) ENCLOSURES. THESE CABLES SHALL BE ENCLOSED IN RIGID CONDUIT OR IN FLEXIBLE, WATERTIGHT CONDUIT WITH BREAKABLE COUPLING(S) AT THE GRADE OR THE HOUSING COVER, AS SHOWN IN APPLICABLE DETAILS.
- THE JOINTS OF THE L-823 PRIMARY CONNECTORS SHALL BE WRAPPED WITH AT LEAST ONE LAYER OF RUBBER OR SYNTHETIC RUBBER TAPE AND ONE LAYER OF PLASTIC TAPE, ONE-HALF LAPPED, EXTENDING AT LEAST 1-1/2 INCHES ON EACH SIDE OF THE JOINT, AS SHOWN ON ELECTRICAL DETAILS SHEET 1.
- THE CABLE ENTRANCE INTO THE FIELD-ATTACHED L-823 CONNECTORS SHALL BE ENCLOSED BY A HEAT-SHRINKABLE TUBING WITH CONTINUOUS INTERNAL ADHESIVE, AS SHOWN ON ELECTRICAL DETAILS SHEET 1.
- L-823 TYPE II, TWO-CONDUCTOR SECONDARY CONNECTORS SHALL BE CLASS 'A' (FACTORY MOLDED).
- THERE SHALL BE NO SPLICES IN THE SECONDARY CABLE(S) WITHIN THE STEMS OF A RUNWAY/TAXIWAY EDGE/THRESHOLD LIGHTING FIXTURE AND THE WIREWAYS LEADING TO TAXIWAY SIGNS AND PAPI/REIL EQUIPMENT.
- ELECTRICAL INSULATING GREASE SHALL BE APPLIED WITHIN THE L-823, SECONDARY, TWO CONDUCTOR CONNECTORS TO PREVENT WATER ENTRANCE. THESE CONNECTORS SHALL NOT BE TAPED.
- DEB ISOLATION TRANSFORMERS SHALL BE BURIED AT A DEPTH OF TEN (10") INCHES ON A LINE CROSSING THE LIGHT AND PERPENDICULAR TO THE RUNWAY/TAXIWAY CENTERLINE AT A LOCATION TWELVE (12") INCHES FROM THE LIGHT OPPOSITE FROM THE RUNWAY/TAXIWAY.
- A SLACK OF THREE (3') FEET, MINIMUM, SHALL BE PROVIDED IN THE PRIMARY CABLE AT EACH TRANSFORMER/CONNECTOR TERMINATION. AT STAKE-MOUNTED LIGHTS, THE SLACK SHALL BE LOOSELY COILED IMMEDIATELY BELOW THE ISOLATION TRANSFORMER. THERE SHALL BE NO ADDITIONAL PAYMENT FOR CABLE SLACK AND THEREFORE THE QUANTITY OF PROPOSED CABLE SLACK HAS NOT BEEN INCLUDED IN THE RESPECTIVE CABLE PAY ITEMS.
- DIRECTION OF PRIMARY CABLES SHALL BE IDENTIFIED BY COLOR CODING AS FOLLOWS: WHEN FACING LIGHT WITH BACK TO PAVEMENT, CABLE TO THE LEFT IS CODED RED AND CABLE TO RIGHT IS CODED BLUE. THIS APPLIES TO STAKE MOUNTED LIGHTS AND BASE MOUNTED LIGHTS WHERE THE BASE HAS ONLY ONE ENTRANCE.
- L-867 BASES SHALL BE SIZE B, 24" DEEP, CLASS I, UNLESS OTHERWISE NOTED.
- BASE MOUNTED BREAKABLE COUPLINGS SHALL NOT HAVE WEEP HOLES TO THE OUTSIDE. PLUGGED UP HOLES SHALL NOT BE ACCEPTABLE. IT SHALL BE A 1/4" DIAMETER, MINIMUM, OR EQUIVALENT OPENING FOR DRAINAGE FROM THE SPACE AROUND THE SECONDARY CONNECTOR INTO THE L-867 BASE.
- THE ELEVATION OF THE BREAKABLE COUPLING GROOVE SHALL NOT EXCEED 1-1/2" ABOVE THE EDGE OF THE COVER IN CASE OF BASE MOUNTED COUPLINGS, OR THE TOP OF THE STAKE IN CASE OF STAKE MOUNTED COUPLINGS.
- WHERE THE BREAKABLE COUPLING IS NOT AN INTEGRAL PART OF THE LIGHT FIXTURE STEM OR MOUNTING LEG, A BEAD OF SILICON SEAL SHALL BE APPLIED COMPLETELY AROUND LIGHT STEM OR WIREWAY AT BREAKABLE COUPLING TO PROVIDE A WATERTIGHT SEAL.
- TOPS OF THE STAKES SUPPORTING LIGHT FIXTURES SHALL BE FLUSH WITH THE SURROUNDING GRADE.
- PLASTIC LIGHTING FIXTURE COMPONENTS, SUCH AS LAMP HEADS, STEMS, BREAKABLE COUPLINGS, BASE COVERS, BRACKETS, STAKES, SHALL NOT BE ACCEPTABLE.
- THE TOLERANCE FOR THE HEIGHT OF RUNWAY/TAXIWAY EDGE LIGHTS SHALL BE: ONE (1) INCH. IN CASE OF STAKE MOUNTED LIGHTS, THE SPECIFIED LIGHTING FIXTURE HEIGHT SHALL BE MEASURED BETWEEN THE TOP OF THE STAKE AND THE TOP OF THE LENS. IN CASE OF BASE MOUNTED LIGHTS, THE SPECIFIED LIGHTING FIXTURE HEIGHT SHALL BE MEASURED BETWEEN THE TOP OF THE BASE FLANGE AND THE TOP OF THE LENS, THUS INCLUDING THE BASE COVER, THE FRANGIBLE COUPLING, THE STEM, THE LAMP HOUSING AND THE LENS.
- THE TOLERANCE FOR THE LATERAL SPACING (LIGHT LANE TO RUNWAY/TAXIWAY CENTERLINE) OF RUNWAY/TAXIWAY EDGE LIGHTS SHALL BE ONE (1) INCH. THIS ALSO APPLIES AT INTERSECTIONS TO LATERAL SPACING BETWEEN LIGHTS OF A RUNWAY/TAXIWAY AND THE INTERSECTING RUNWAY/TAXIWAY.

- ENTRANCES INTO L-867 BASES SHALL HAVE CONDUIT COUPLINGS OR REDUCERS TO INTERFACE UNIT DUCT/CONDUIT TO L-867 BASE HUBS, OR SHALL BE SEALED WITH HEAT SHRINK AS SHOWN IN DETAIL "B" ON ELECTRICAL DETAILS SHEET 1.
- GALVANIZED/PAINTED EQUIPMENT/COMPONENT SURFACES SHALL NOT BE DAMAGED BY DRILLING, FILING, ETC. DRAIN HOLES IN METAL TRANSFORMER HOUSINGS SHALL BE MADE BEFORE GALVANIZING.
- EDGE LIGHT NUMBERING TAGS SHALL BE FACING THE PAVEMENT.
- CABLE/SPLICE/DUCT MARKERS SHALL BE PRECAST CONCRETE OF THE SIZE SHOWN. LETTERS/NUMBERS/ARROWS FOR THE LEGEND TO BE IMPRESSED INTO THE TOPS OF THE MARKERS SHALL BE PRE-ASSEMBLED AND SECURED IN THE MOLD BEFORE THE CONCRETE IS POURED. LEGEND INSCRIBED BY HAND IN WET CONCRETE SHALL NOT BE ACCEPTABLE.
- ALL UNDERGROUND CABLE RUNS SHALL BE IDENTIFIED BY CABLE MARKERS AT 200 FEET MAXIMUM SPACING, WITH AN ADDITIONAL MARKER AT EACH CHANGE OF DIRECTION OF THE CABLE RUN. CABLE MARKERS SHALL BE INSTALLED IMMEDIATELY ABOVE THE CABLES.
- THERE SHALL BE NO SPLICES BETWEEN THE ISOLATION TRANSFORMERS. L-823 CONNECTORS ARE ALLOWED AT TRANSFORMER CONNECTIONS ONLY, UNLESS OTHERWISE SHOWN.
- APPLY AN OXIDE INHIBITING, ANTI-SEIZING COMPOUND TO ALL SCREWS, NUTS AND BREAKAGE COUPLING THREADS.
- LOCATIONS OF ENDS OF ALL UNDERGROUND DUCTS SHALL BE IDENTIFIED BY DUCT MARKERS.
- WHERE A PARALLEL, CONSTANT VOLTAGE PAPI SYSTEM IS PROVIDED, THE "T" SPLICES SHALL BE OF THE CAST TYPE.
- CONCRETE USED FOR SLABS, FOOTINGS, BACKFILL AROUND TRANSFORMER HOUSINGS, MARKINGS, ETC. SHALL BE 3500 PSI, AIR-ENTRAINED.
- ALL POWER AND CONTROL CABLES IN MAN/HAND HOLES SHALL BE TAGGED. USE EMBOSSED COPPER STRIPS TO BE ATTACHED AT BOTH ENDS TO THE CABLE BY THE USE OF PLASTIC STRAPS. MINIMUM OF TWO TAGS SHALL BE PROVIDED ON EACH CABLE IN A MAN/HAND HOLE-ONE AT THE CABLE ENTRANCE AND ONE AT THE CABLE EXIT.
- THE LOCATION, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND AND/OR ABOVEGROUND UTILITIES INDICATED ON THE PLANS IS NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT OR COMPLETE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY WHATEVER IN RESPECT TO ACCURACY, COMPLETENESS, OR SUFFICIENCY OF THE INFORMATION. THERE IS NO GUARANTEE EITHER EXPRESSED OR IMPLIED, THAT THE LOCATIONS, SIZE AND TYPE OF MATERIAL OF EXISTING UNDERGROUND UTILITIES INDICATED ARE REPRESENTATIVE OF THOSE TO BE ENCOUNTERED IN THE CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ACTUAL LOCATION OF ALL SUCH FACILITIES, INCLUDING SERVICE CONNECTIONS TO UNDERGROUND UTILITIES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES OF HIS OPERATIONAL PLANS AND SHALL OBTAIN FROM THE RESPECTIVE UTILITY COMPANIES DETAILED INFORMATION AND ASSISTANCE RELATIVE TO THE LOCATION OF THEIR FACILITIES AND THE WORKING SCHEDULE OF THE COMPANIES FOR REMOVAL OR ADJUSTMENT WHERE REQUIRED. IN THE EVENT AN UNEXPECTED UTILITY INTERFERENCE IS ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY COMPANY OF JURISDICTION. THE OWNER'S REPRESENTATIVE AND/OR THE RESIDENT ENGINEER SHALL ALSO BE IMMEDIATELY NOTIFIED. ANY DAMAGE TO SUCH MAINS AND SERVICES SHALL BE RESTORED TO SERVICE AT ONCE AND PAID FOR BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CONTRACT. ALL UTILITY CABLES AND LINES SHALL BE LOCATED BY THE RESPECTIVE UTILITY. **CONTACT JULIE (JOINT UTILITY LOCATION INFORMATION FOR EXCAVATORS) FOR UTILITY INFORMATION, PHONE: 1-800-892-0123.** CONTACT THE FAA (FEDERAL AVIATION ADMINISTRATION) FOR ASSISTANCE IN LOCATING FAA CABLES AND UTILITIES. LOCATION OF FAA POWER, CONTROL AND COMMUNICATION CABLES SHALL BE COORDINATED WITH AND/OR LOCATED BY THE FAA. ALSO CONTACT AIRPORT DIRECTOR/MANAGER AND AIRPORT PERSONNEL FOR ASSISTANCE IN LOCATING UNDERGROUND AIRPORT CABLES AND/OR UTILITIES. ALSO COORDINATE WORK WITH ALL ABOVE GROUND UTILITIES.
- WHEN PREPARING CABLE FOR SPLICES, THE CONTRACTOR SHALL USE A CABLE STRIPPER/PENCILLER WHENEVER CABLE CONNECTIONS ARE MADE.

GROUNDING NOTES FOR AIRFIELD LIGHTING

- GROUNDING FOR RUNWAY LIGHTS, TAXIWAY LIGHTS, AND LIGHTED TAXI GUIDANCE SIGNS SHALL BE AS DETAILED ON THE PLANS AND AS SPECIFIED HEREIN. PER FAA AC 150/5340-30G DESIGN AND INSTALLATION DETAILS FOR AIRPORT VISUAL AIDS, CHAPTER 12, PART 12.6; A GROUND MUST BE INSTALLED AT EACH LIGHT FIXTURE. THE PURPOSE OF THE LIGHT BASE GROUND IS TO PROVIDE A DEGREE OF PROTECTION FOR MAINTENANCE PERSONNEL FROM POSSIBLE CONTACT WITH AN ENERGIZED LIGHT BASE OR MOUNTING STAKE THAT MAY RESULT FROM A SHORTED POWER CABLE OR ISOLATION TRANSFORMER. A LIGHT BASE GROUND SHALL BE INSTALLED AT EACH TRANSFORMER BASE/LIGHT CAN ASSOCIATED WITH RUNWAY LIGHTS, TAXIWAY LIGHTS, AND LIGHTED TAXI GUIDANCE SIGNS. A LIGHT BASE GROUND SHALL ALSO BE INSTALLED AT EACH STAKE MOUNTED LIGHT FIXTURE. A LIGHT BASE GROUND SHALL BE INSTALLED AND CONNECTED TO THE METAL FRAME OF EACH TAXI GUIDANCE SIGN AS DETAILED ON THE PLANS AND IN ACCORDANCE WITH THE RESPECTIVE TAXI GUIDANCE SIGN MANUFACTURER RECOMMENDATIONS. THE LIGHT BASE GROUND SHALL BE A #6 AWG BARE COPPER CONDUCTOR CONNECTED TO THE GROUND LUG ON THE RESPECTIVE L-867 TRANSFORMER BASE/LIGHT CAN OR MOUNTING STAKE AND A 3/4-INCH DIAMETER BY 10-FOOT LONG (MINIMUM) UL LISTED COPPER CLAD GROUND ROD. CONNECTIONS TO GROUND LUGS ON THE L-867 TRANSFORMER BASE/LIGHT CAN OR MOUNTING STAKE SHALL BE WITH A UL LISTED GROUNDING CONNECTOR SUITABLE FOR DIRECT BURY IN EARTH OR CONCRETE. CONNECTIONS TO GROUND RODS SHALL BE MADE WITH EXOTHERMIC WELD TYPE CONNECTORS, CADWELD BY ERICO PRODUCTS, INC., SOLON, OHIO, (PHONE: 800-248-9353), THERMOWELD BY CONTINENTAL INDUSTRIES, INC., TULSA, OKLAHOMA (PHONE: 918-663-1440), ULTRAWELD BY HARGER, GRAYSLAKE, ILLINOIS (PHONE: 800-842-7437), OR APPROVED EQUAL. EXOTHERMIC WELD CONNECTIONS SHALL BE INSTALLED IN CONFORMANCE WITH THE RESPECTIVE MANUFACTURER'S DIRECTIONS USING MOLDS AS REQUIRED FOR EACH RESPECTIVE APPLICATION. BOLTED CONNECTIONS WILL NOT BE PERMITTED AT GROUND RODS. TOP OF GROUND RODS SHALL BE BURIED 30 INCHES MINIMUM BELOW GRADE, UNLESS SPECIFIED OTHERWISE HEREIN, FOR RESPECTIVE APPLICATIONS.
- FURNISH AND INSTALL A #6 AWG BARE SOLID COPPER GROUND AND BOND IT TO EACH GROUND ROD AT THE RESPECTIVE AIRFIELD LIGHT FIXTURES AND TAXI GUIDANCE SIGNS. THE #6 AWG GROUND SHALL BE DIRECT BURIAL IN TRENCH APPROXIMATELY 12 TO 18 INCHES BELOW GRADE. THE GROUND CONDUCTOR MAY BE INSTALLED ABOVE THE #8 FAA L-824, 5000-VOLT CABLE IN UNIT DUCT OR IN AN ADJACENT TRENCH. THE #6 AWG GROUND SHALL BE CONNECTED TO EACH RESPECTIVE GROUND ROD WITH AN EXOTHERMIC WELD CONNECTION. THE COMPLETED GROUND WIRE INSTALLED WILL PROVIDE A GROUND RING SYSTEM FOR THE RESPECTIVE AIRFIELD LIGHTING CIRCUIT. THE GROUND WIRE WILL NOT BE INSTALLED WITH THE HOMERUN CABLES FOR THE RESPECTIVE AIRFIELD LIGHTING CIRCUIT BACK TO THE VAULT. THIS IS TO HELP ACCOMPLISH A GROUNDING RESISTANCE OF 25 OHMS OR LESS FOR THE GROUND ROD AT EACH LIGHT PER THE REQUIREMENTS IN FAA AC 150/5340-30G. THE #6 AWG BARE SOLID COPPER GROUND WILL BE PAID FOR UNDER ITEM AR108756 1/C #6 GROUND PER LINEAR FOOT.
- FOR BASE MOUNTED LIGHT FIXTURES THE LIGHT FIXTURE MUST BE BONDED TO THE LIGHT BASE INTERNAL GROUND LUG VIA A #6 AWG STRANDED COPPER WIRE RATED FOR 600 VOLTS WITH GREEN XHHW OR USE INSULATION. THE GROUND WIRE LENGTH MUST BE SUFFICIENT TO ALLOW THE REMOVAL OF THE LIGHT FIXTURE FROM THE LIGHT BASE FOR ROUTING MAINTENANCE. SEE THE LIGHT FIXTURE MANUFACTURER'S INSTRUCTIONS FOR PROPER METHODS OF ATTACHING BONDING WIRE.
- CLEAN ALL METAL SURFACES BEFORE MAKING GROUND CONNECTIONS. METALLIC SURFACES TO BE JOINED SHALL BE PREPARED BY THE REMOVAL OF ALL NON-CONDUCTIVE MATERIAL PER 2011 NATIONAL ELECTRICAL CODE ARTICLE 250-12.
- PER FAA 150/5340-30G THE RESISTANCE TO GROUND OF THE RESPECTIVE MOUNTING STAKE OR LIGHT BASE (WITH GROUND ROD CONNECTED) MUST BE 25 OHMS OR LESS.
- FOR TAXIWAY LIGHTS THAT ARE SPACED WITH LESS THAN 10 FEET OF SEPARATION BETWEEN THEM, PROVIDE ONE 3/4-INCH DIAMETER BY 10 FEET LONG GROUND ROD PER TWO ADJACENT TAXIWAY LIGHTS. LOCATE GROUND ROD MIDWAY BETWEEN THE TWO TAXIWAY LIGHTS.
- FOR EACH AIRFIELD LIGHT FIXTURE, TAXI GUIDANCE SIGN, AND NAVAID THE CONTRACTOR SHALL TEST THE MADE ELECTRODE GROUND SYSTEM WITH AN INSTRUMENT SPECIFICALLY DESIGN FOR TESTING GROUND SYSTEMS. TEST RESULT SHALL BE RECORDED FOR EACH AIRFIELD LIGHT FIXTURE, TAXI GUIDANCE SIGN, AND NAVAIDS INSTALLATION. IF GROUND RESISTANCE EXCEEDS 25 OHMS, CONTACT THE PROJECT ENGINEER FOR FURTHER DIRECTION. COPIES OF THE GROUND SYSTEM TEST RESULTS SHALL BE FURNISHED TO THE PROJECT ENGINEER.

REVISION		DATE	
CRAWFORD COUNTY AIRPORT ROBINSON CRAWFORD COUNTY, ILLINOIS			
Hanson Proj. No. 13A0058		E-002-NOTES.dwg	
Scale NOT TO SCALE		Date 03/07/14	
LAYOUT	KNL	08/16/13	
DRAWN	BAK	08/19/13	
REVIEWED	CAH/KNL	03/07/14	
 HANSON <small>© Copyright Hanson Professional Services Inc. 2014</small> Hanson Professional Services Inc. 1525 South Sixth Street Springfield, Illinois 62703-2886 Ph: (217) 788-2450 Fax: (217) 788-2503 www.hanson-inc.com Offices Nationwide			
REPLACE MIRL AND MITL SYSTEMS		ELECTRICAL NOTES SHEET 2	
36 <small>36 of 48 sheets</small>			

ELECTRICAL LEGEND - ONE-LINE DIAGRAM	
	CABLE TERMINATOR/LUG
	TRANSFORMER
	DISCONNECT SWITCH
	FUSIBLE DISCONNECT SWITCH
	CIRCUIT BREAKER
	THERMAL MAGNETIC CIRCUIT BREAKER
	FUSE
	TRANSIENT VOLTAGE SURGE SUPPRESSOR OR SURGE PROTECTOR DEVICE
	GROUND - GROUND ROD, GROUNDING ELECTRODE, OR AT EARTH POTENTIAL
	INDICATING LIGHT
	MOTOR
	LOAD, MOTOR, # = HORSEPOWER
	ELECTRIC UTILITY METER BASE
	JUNCTION BOX WITH SPLICE
	EQUIPMENT, XXX = DEVICE DESCRIPTION
	GROUND BUS OR TERMINAL
	NEUTRAL BUS
	PANELBOARD WITH MAIN LUGS
	PANELBOARD WITH MAIN BREAKER
	FUSE PANEL WITH MAIN FUSE PULLOUT
	DUPLEX RECEPTACLE 120V SINGLE PHASE GROUNDING TYPE
	CONTROL STATION
	TRANSFER SWITCH
	ENGINE GENERATOR SET

ELECTRICAL LEGEND - SCHEMATIC	
	NORMALLY OPEN (N.O.) CONTACT
	NORMALLY CLOSED (N.C.) CONTACT
	STARTER COIL, * = STARTER NUMBER
	OVERLOAD RELAY CONTACT
	CONTROL RELAY, * = CONTROL RELAY NUMBER
	RELAY, * = RELAY NUMBER
	TOGGLE SWITCH / 2 POSITION SWITCH
	2-POSITION SELECTOR SWITCH
	3-POSITION SELECTOR SWITCH (H-O-A SHOWN)
	2 POLE DISCONNECT SWITCH
	3 POLE DISCONNECT SWITCH
	PHOTOCELL
	TERMINAL BLOCK, * = TERMINAL NUMBER
	DEVICE TERMINAL, * = DEVICE TERMINAL NUMBER
	INTERNAL PANEL WIRING
	FIELD WIRING
	FUSE
	GROUND BUS OR TERMINAL
	NEUTRAL BUS
	GROUND, GROUND ROD, GROUND BUS
	INDUSTRIAL CONTROL RELAY OR LIGHTING CONTACTOR
	S1 CUTOUT HANDLE REMOVED
	S1 CUTOUT HANDLE INSERTED
	N.O. THERMAL SWITCH
	N.C. THERMAL SWITCH
	L-830 SERIES ISOLATION TRANSFORMER

ELECTRICAL ABBREVIATIONS	
A.F.F.	ABOVE FINISHED FLOOR
A, AMP	AMPERES
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
BKR	BREAKER
C	CONDUIT
CB	CIRCUIT BREAKER
CKT	CIRCUIT
CR	CONTROL RELAY
CU	COPPER
DPDT	DOUBLE POLE DOUBLE THROW
DPST	DOUBLE POLE SINGLE THROW
EM	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
ENCL	ENCLOSURE
EP	EXPLOSION PROOF
ES	EMERGENCY STOP
ETL	INTERTEK - ELECTRICAL TESTING LABS
ETM	ELAPSE TIME METER
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFI	GROUND FAULT INTERRUPTER
GND	GROUND
GRSC	GALVANIZED RIGID STEEL CONDUIT
HID	HIGH INTENSITY DISCHARGE
HOA	HAND OFF AUTOMATIC
HP	HORSEPOWER
HPS	HIGH PRESSURE SODIUM
J	JUNCTION BOX
KVA	KILOVOLT AMPERE(S)
KW	KILOWATTS
LC	LIGHTING CONTACTOR
LTFCM	LIQUID TIGHT FLEXIBLE METAL CONDUIT (UL LISTED)
LTG	LIGHTING
LP	LIGHTING PANEL
MAX	MAXIMUM
MCB	MAIN CIRCUIT BREAKER
MCM	THOUSAND CIRCUAR MIL
MDP	MAIN DISTRIBUTION PANEL
MFR	MANUFACTURER
MH	METAL HALIDE
MIN	MINIMUM
MLO	MAIN LUGS ONLY
NEC	NATIONAL ELECTRICAL CODE (NFPA 70)
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OHE	OVERHEAD ELECTRIC
OL	OVERLOAD

ELECTRICAL ABBREVIATIONS (CONTINUED)	
PB	PULL BOX
PC	PHOTO CELL
PDB	POWER DISTRIBUTION BLOCK
PNL	PANEL
RCPT	RECEPTACLE
R	RELAY
S	STARTER
SPD	SURGE PROTECTION DEVICE
SPST	SINGLE POLE SINGLE THROW
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
TYP	TYPICAL
UG	UNDERGROUND
UGE	UNDERGROUND ELECTRIC
UL	UNDERWRITER'S LABORATORIES
V	VOLTS
W/	WITH
W/O	WITHOUT
WP	WEATHER PROOF
XFER	TRANSFER
XFMR	TRANSFORMER

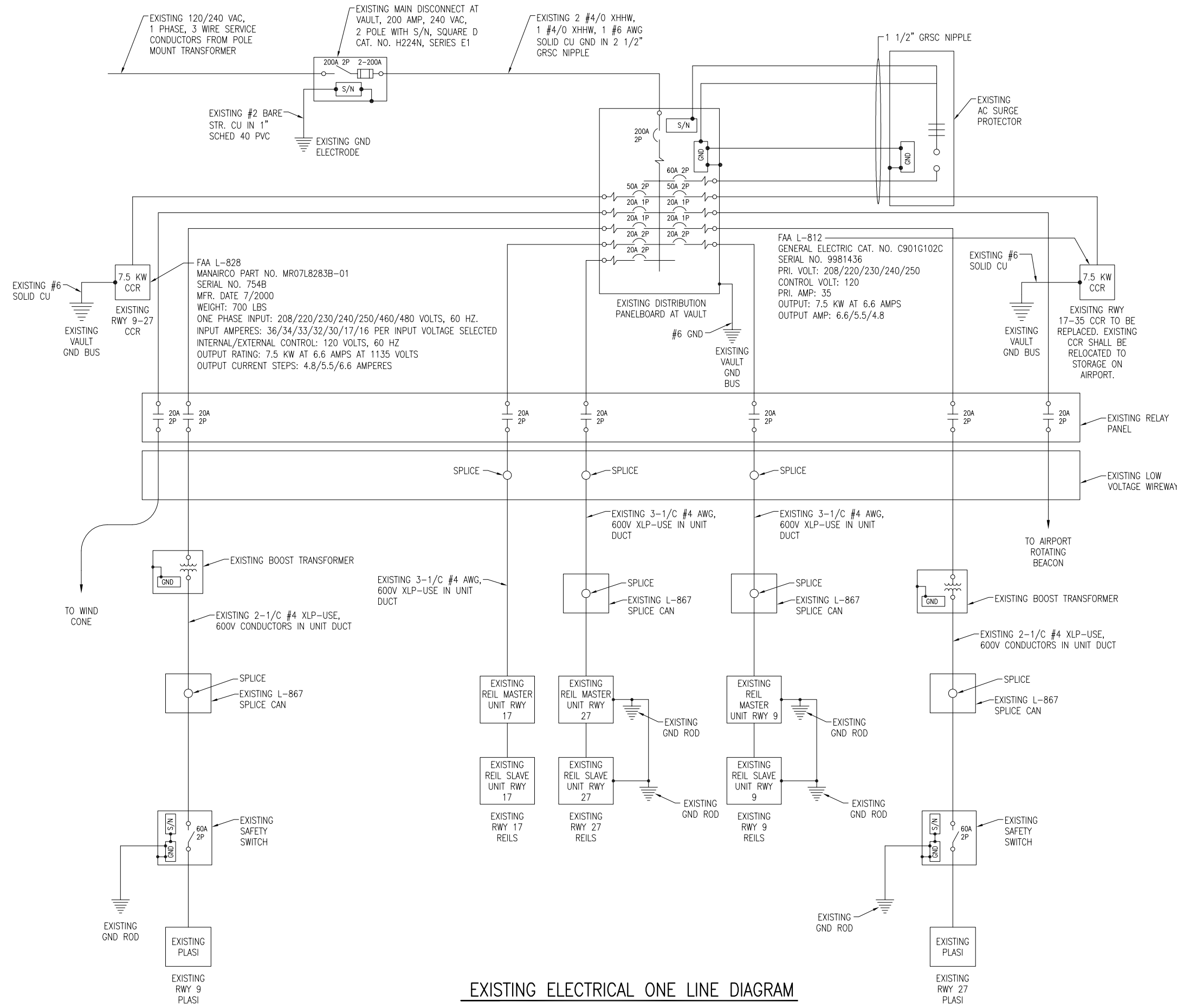
AIRPORT EQUIPMENT/FACILITY ABBREVIATIONS	
ASOS	AUTOMATED SURFACE OBSERVING SYSTEM
ATCT	AIR TRAFFIC CONTROL TOWER
AWOS	AUTOMATED WEATHER OBSERVING SYSTEM
CCR	CONSTANT CURRENT REGULATOR
DME	DISTANCE MEASURING EQUIPMENT
FAR	FEDERAL AVIATION REGULATION
GS	GLIDE SLOPE FACILITY
HIRL	HIGH INTENSITY RUNWAY LIGHT
ILS	INSTRUMENT LANDING SYSTEM
IM	INNER MARKER
LIR	LOW IMPACT-RESISTANT
LOC	LOCALIZER FACILITY
MALS	MEDIUM INTENSITY APPROACH LIGHTING SYSTEM
MALSR	MEDIUM INTENSITY APPROACH LIGHTING SYSTEM WITH RUNWAY ALIGNMENT INDICATING LIGHTS
MIRL	MEDIUM INTENSITY RUNWAY LIGHT
MITL	MEDIUM INTENSITY TAXIWAY LIGHT
NDB	NON-DIRECTIONAL BEACON
PAPI	PRECISION APPROACH PATH INDICATOR
PLASI	PULSE LIGHT APPROACH SLOPE INDICATOR
RAIL	RUNWAY ALIGNMENT INDICATING LIGHTS
REIL	RUNWAY END IDENTIFIER LIGHT
RVR	RUNWAY VISUAL RANGE
VADI	VISUAL APPROACH DESCENT INDICATOR
VASI	VISUAL APPROACH SLOPE INDICATOR
VOR	VERY HIGH FREQUENCY OMNIDIRECTIONAL RANGE FACILITY
WC	WIND CONE

NOTES:

- ALL ELECTRICAL EQUIPMENT SHALL BE INSTALLED IN CONFORMANCE WITH NFPA 70 - NATIONAL ELECTRICAL CODE (NEC) MOST CURRENT ISSUE IN FORCE, THE RESPECTIVE EQUIPMENT MANUFACTURER'S DIRECTIONS AND ALL OTHER APPLICABLE LOCAL CODES, LAWS, ORDINANCES, AND REQUIREMENTS IN FORCE. ANY INSTALLATIONS WHICH VOID THE U.L. LISTING, ETL LISTING (OR OTHER THIRD PARTY LISTING) AND/OR THE MANUFACTURER'S WARRANTY OF A DEVICE WILL NOT BE PERMITTED.
- ALL VAULT WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS SHALL BE COORDINATED WITH THE AIRPORT MANAGER. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
- COLOR CODE PHASE AND NEUTRAL CONDUCTOR INSULATION FOR NO. 6 AWG OR SMALLER. PROVIDE COLORED INSULATION OR COLORED MARKING TAPE FOR PHASE AND NEUTRAL CONDUCTORS FOR NO. 4 AWG AND LARGER. INSULATED GROUND CONDUCTORS SHALL HAVE GREEN COLORED INSULATION FOR ALL CONDUCTOR AWG AND/OR KCMIL TO COMPLY WITH NEC 250.119. NEUTRAL CONDUCTORS SHALL HAVE WHITE COLORED INSULATION FOR NO. 6 AWG AND SMALLER TO MEET THE REQUIREMENTS OF NEC 200.6. STANDARD COLORS FOR POWER WIRING AND BRANCH CIRCUITS SHALL BE AS FOLLOWS:

120/240 VAC, 1 PHASE, 3 WIRE	
PHASE A	BLACK
PHASE B	RED
NEUTRAL	WHITE
GROUND	GREEN
- SEE RESPECTIVE SITE PLANS FOR SITE LEGEND INFORMATION.
- LTFCM DENOTES LIQUID TIGHT FLEXIBLE METAL CONDUIT UL LISTED, SUNLIGHT RESISTANT, & SUITABLE FOR GROUNDING. LIQUID TIGHT FLEXIBLE METAL CONDUIT AND ASSOCIATED FITTINGS SHALL BE U.L. LISTED TO MEET THE REQUIREMENTS OF NEC 350.6. LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS USED FOR FLEXIBILITY (INCLUDING CONNECTIONS TO CCR'S & TRANSFORMERS) SHALL REQUIRE AN EXTERNAL BONDING JUMPER OR INTERNAL EQUIPMENT GROUNDING CONDUCTOR PER NEC 350.60. EXTERNAL BONDING JUMPERS USED WITH CCR INSTALLATIONS SHALL BE #6 AWG COPPER (MINIMUM). DO NOT INSTALL LTFCM THAT IS NOT UL LISTED. CONFIRM LTFCM BEARS THE UL LABEL PRIOR TO INSTALLATION.
- ALL ENCLOSURES RATED NEMA 4, 4X SHALL HAVE WATERTIGHT HUBS AT CONDUIT ENTRANCES UL LISTED NEMA 4, 4X FOR THE RESPECTIVE ENCLOSURE, TO MAINTAIN THE NEMA 4, 4X RATING.
- HIGH VOLTAGE AND LOW VOLTAGE CIRCUITS SHALL NOT BE INSTALLED IN THE SAME WIREWAY, CONDUIT, DUCT, OR HANDHOLE.

REVISION		DATE			
<p>CRAWFORD COUNTY AIRPORT ROBINSON CRAWFORD COUNTY, ILLINOIS</p>					
<p>IL. PROJ.: RSY-4334 S.B.C. PROJ.: 3-17-SBGP-XX</p>					
<p>Hanson Proj. No. 13A0058 Filename: E-003-ELEC.dwg Scale: NOT TO SCALE Date: 03/07/14</p>		<p>LAYOUT: KNL 08/19/13 DRAWN: BAK 08/19/13 REVIEWED: CAH/KNL 03/07/14</p>	<p>HANSON Professional Services Inc. 2014 Hanson Professional Services Inc. 1525 South Sixth Street Springfield, Illinois 62703-2986 Ph: (217) 788-2450 Fax: (217) 788-2503 www.hanson-inc.com Offices Nationwide</p>		
<p>REPLACE MIRL AND MITL SYSTEMS</p>		<p>ELECTRICAL LEGEND AND ABBREVIATIONS</p>			
<p>37</p>					
<p>37 of 48 sheets</p>					



NOTES

1. ALL VAULT WORK, AND/OR POWER OUTAGES, SHALL BE COORDINATED WITH THE AIRPORT MANAGER AND THE RESIDENT ENGINEER/RESIDENT PROJECT REPRESENTATIVE.
2. CONTRACTOR SHALL EXAMINE THE SITE AND FIELD VERIFY EXISTING CONDITIONS.
3. ALL VAULT WORK, POWER OUTAGES AND/OR SHUT DOWN OF EXISTING SYSTEMS SHALL BE COORDINATED WITH THE AIRPORT MANAGER. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY AND HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
4. EQUIPMENT DESIGNATED FOR REMOVAL SHALL BE TURNED OVER TO THE AIRPORT. IN THE EVENT THE AIRPORT DOES NOT WANT THE RESPECTIVE EQUIPMENT, THE CONTRACTOR SHALL DISPOSE OF IT OFF SITE.
5. EXISTING ABANDONED CABLES INSIDE VAULT SHALL BE REMOVED. EXISTING CABLES AND WIRING ASSOCIATED WITH SYSTEMS TO BE REMOVED AND/OR REPLACED SHALL BE REMOVED WHERE ACCESSIBLE.

**EXISTING ELECTRICAL ONE LINE DIAGRAM
FOR VAULT AND AIRFIELD**

REVISION	DATE

**CRAWFORD COUNTY AIRPORT
ROBINSON
CRAWFORD COUNTY, ILLINOIS**

IL. PROJ.: RSY-4334 S.B.C. PROJ.: 3-17-SBGP-XX

Hanson Proj. No. 13A0058	Filename: E-601-ELEC.dwg	Scale: 1" = 50'	Date: 03/07/14
LAYOUT	KNL	08/21/13	
DRAWN	BAK	08/21/13	
REVIEWED	CAH/KNL	03/07/14	

HANSON
 © Copyright Hanson Professional Services Inc. 2014
Hanson Professional Services Inc.
 1525 South Sixth Street
 Springfield, Illinois 62703-2986
 Ph: (217) 788-2450 Fax: (217) 788-2503
 www.hanson-inc.com
 Offices Nationwide

**REPLACE MRL AND
MITL SYSTEMS**

**EXISTING ELECTRICAL ONE
LINE DIAGRAM FOR VAULT
AND AIRFIELD**

MAR 25, 2014, 2:00 PM H:\GLOD00382
 pw:\spi-svr206\hanson.dom\hanson_projects\Documents\13\jobs\13A0058\13A0058D\CAD\Work\Sheet\E-601-ELEC

REVISION	DATE

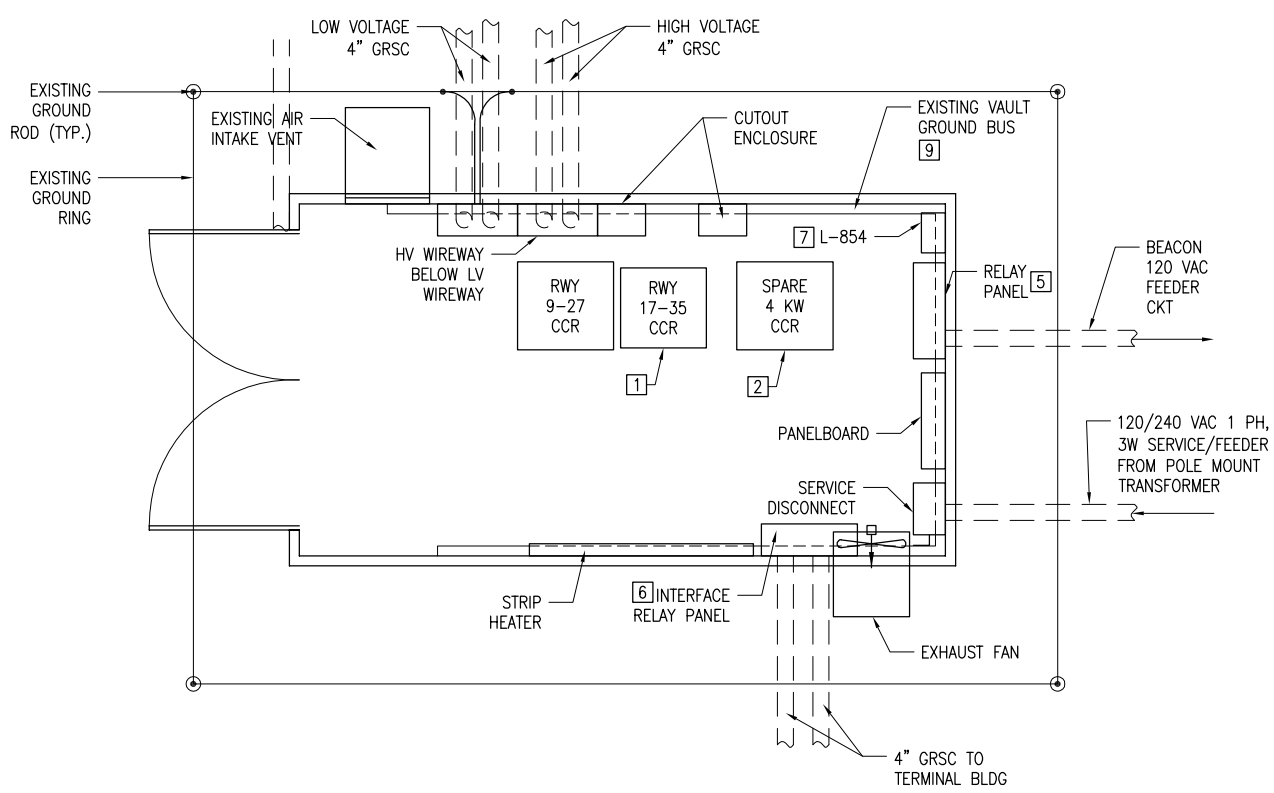
CRAWFORD COUNTY AIRPORT
ROBINSON
CRAWFORD COUNTY, ILLINOIS

IL. PROJ.: RSY-4334 S.B.C. PROJ.: 3-17-SBGP-XX

Hanson Proj. No. 13A0058	
Filename: E-101-VLT.dwg	
Scale: NOT TO SCALE	
Date: 03/07/14	
LAYOUT: KNL 09/04/13	
DRAWN: BAK 09/06/13	
REVIEWED: CAH/KNL 03/07/14	

HANSON
Professional Services Inc. 2014
1525 South Sixth Street
Springfield, Illinois 62703-2986
Ph: (217) 788-2450 Fax: (217) 788-2503
www.hanson-inc.com
Offices Nationwide

REPLACE MRL AND MITL SYSTEMS
VAULT FLOOR PLAN



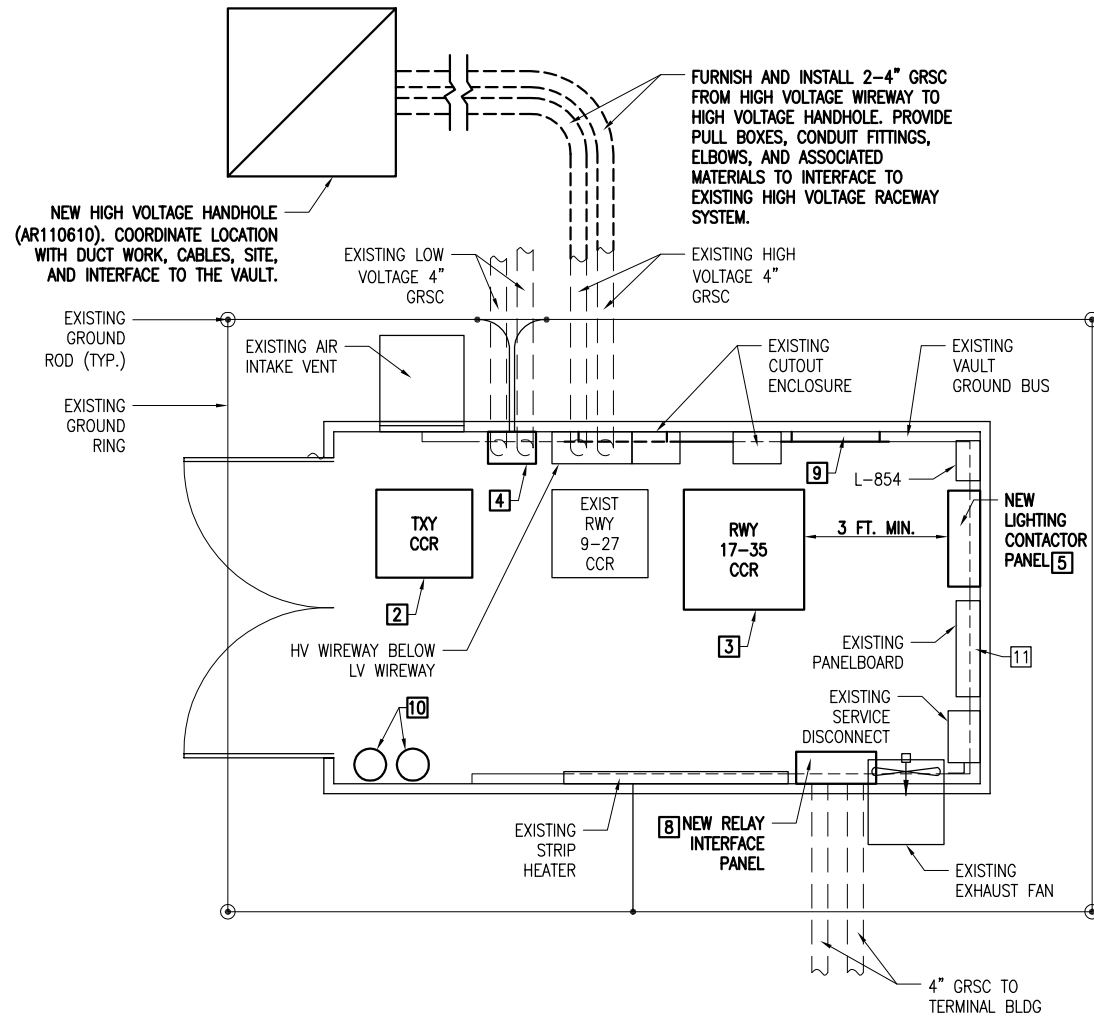
EXISTING FLOOR PLAN FOR VAULT
N
0 1' 2' 4'
HALF SIZE SCALE: 1/4" = 1'-0"
FULL SIZE SCALE: 1/2" = 1'-0"

KEYED NOTES

1. EXISTING RUNWAY 17-35 CCR (GENERAL ELECTRIC 7.5 KW UNIT) TO BE REMOVED AND RELOCATED TO STORAGE AREA LOCATED ON THE AIRPORT.
2. EXISTING MANAIRCO 4 KW CCR TO BE WIRED FOR TAXIWAY "A" CIRCUIT. SEE GENERAL NOTE 1.
3. NEW RUNWAY 17-35 CCR. SEE GENERAL NOTE 1.
4. NEW CUTOUT WITH ENCLOSURE FOR TAXIWAY CIRCUIT.
5. EXISTING RELAY PANEL TO BE REMOVED AND REPLACED WITH A NEW LIGHTING CONTACTOR PANEL. SEE "LIGHTING CONTACTOR PANEL SCHEMATIC" AND "LIGHTING CONTACTOR PANEL DETAIL"
6. EXISTING INTERFACE RELAY PANEL TO BE REMOVED. DISCONNECT AND REMOVE ASSOCIATED CONTROL WIRING.
7. EXISTING RELAY INTERFACE PANELS LOCATED BELOW L-854 RADIO RECEIVER TO BE REMOVED.
8. NEW RELAY INTERFACE CONTROL PANEL FOR CONSTANT CURRENT REGULATORS AND NAVAIDS.
9. EXISTING 1/8 INCH THICK X 3/4 INCH WIDE GROUND BUS BEHIND CONSTANT CURRENT REGULATORS SHALL BE REPLACED WITH A 1/4 INCH THICK X 2 INCH WIDE X 8 FEET LONG COPPER GROUND BUS. SEE "CCR GROUND BUS RISER" FOR DETAILS.

KEYED NOTES

10. FURNISH AND INSTALL A UL RATED, 10 POUND CARBON DIOXIDE FIRE EXTINGUISHER SUITABLE FOR USE ON CLASS C FIRES AND A 10 POUND CLASS 4A-80B-C DRY CHEMICAL ABC FIRE EXTINGUISHER SUITABLE FOR USE ON CLASS A,B,C FIRES, IN THE VAULT SHELTER. PER NFPA 10 "PORTABLE FIRE EXTINGUISHERS" CLASS C ARE FOR FIRES THAT INVOLVE ENERGIZED ELECTRICAL EQUIPMENT. FIRE EXTINGUISHERS SHALL BE MADE IN THE UNITED STATES OF AMERICA TO COMPLY WITH BUY AMERICAN REQUIREMENT. FIRE EXTINGUISHER TYPE CO2 SHALL BE AMEREX MODEL 330, ANSUL SENTRY 10 MODEL CD10A-1 OR APPROVED EQUAL. FIRE EXTINGUISHER DRY CHEMICAL TYPE ABC SHALL BE AMEREX MODEL B456, OR APPROVED EQUAL. PROVIDE WALL MOUNTING BRACKET FOR EACH FIRE EXTINGUISHER. CONFIRM MODEL NUMBERS WITH THE RESPECTIVE FIRE EXTINGUISHER MANUFACTURER.
11. EXISTING PANELBOARD. SEE GENERAL NOTE 1 FOR INFO ON CIRCUIT BREAKER ADDITIONS AND CHANGES.

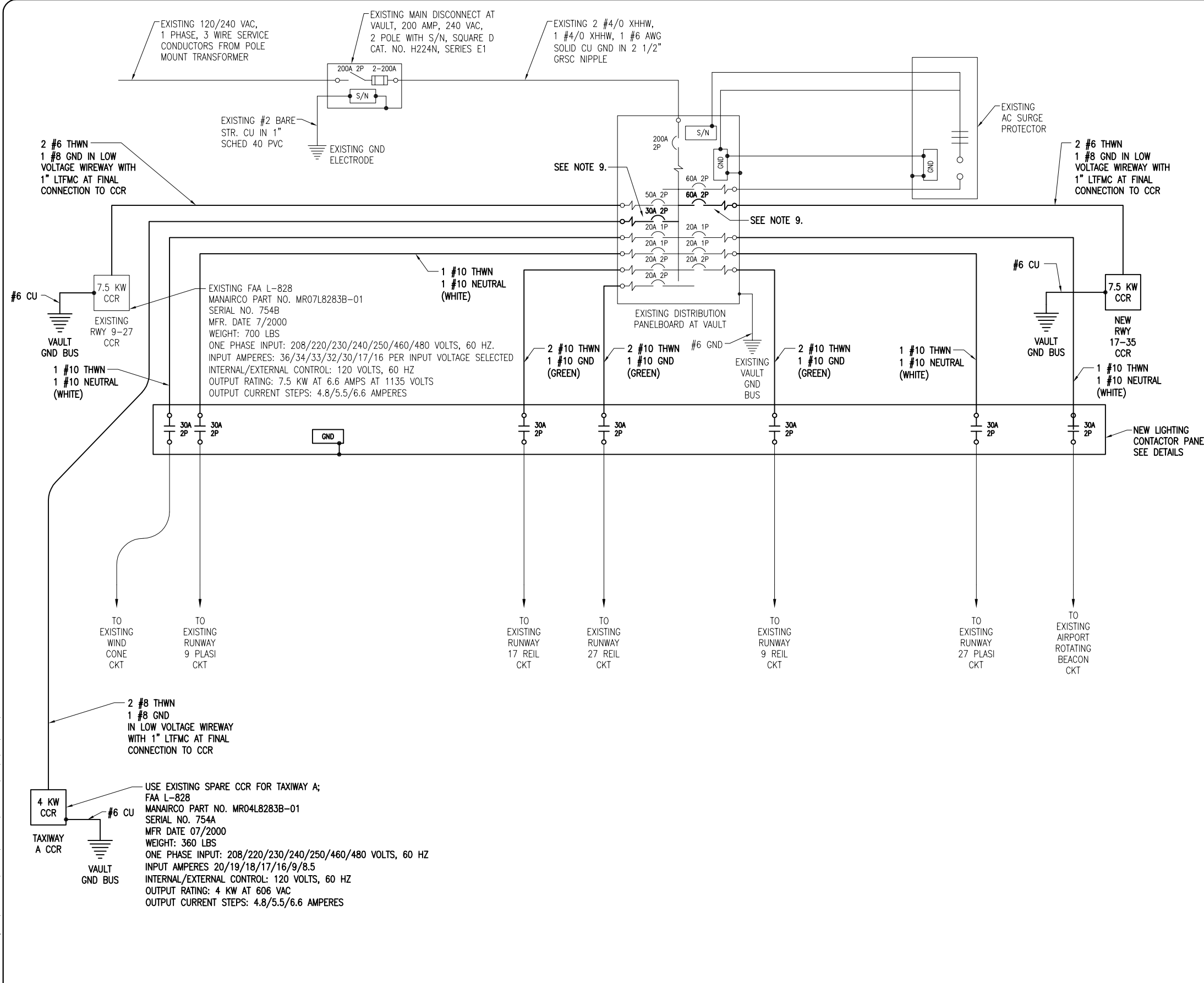


NEW FLOOR PLAN FOR VAULT
N
0 1' 2' 4'
HALF SIZE SCALE: 1/4" = 1'-0"
FULL SIZE SCALE: 1/2" = 1'-0"

GENERAL NOTES

1. SEE "PROPOSED ELECTRICAL ONE LINE DIAGRAM FOR VAULT AND AIRFIELD" FOR LOW VOLTAGE INPUT POWER WIRING REQUIREMENTS TO CCR'S (CONSTANT CURRENT REGULATORS), LIGHTING CONTACTOR PANEL, AND OTHER EQUIPMENT. SEE "HIGH VOLTAGE WIRING SCHEMATIC" FOR CCR OUTPUT WIRING REQUIREMENTS. SEE "AIRFIELD LIGHTING WIRING SCHEMATIC" FOR CCR AND NAVAID CONTROL WIRING REQUIREMENTS.
2. CONSTANT CURRENT REGULATORS AND THEIR RESPECTIVE SERIES PLUG CUTOUTS SHALL BE CLEARLY LABELED TO IDENTIFY THE RESPECTIVE REGULATOR DESIGNATION, RUNWAY OR TAXIWAY SERVED, POWER SOURCE OR CIRCUIT, AND VOLTAGE SYSTEM.
3. MAINTAIN SEPARATION OF HIGH VOLTAGE WIRING FROM LOW VOLTAGE WIRING TO COMPLY WITH NEC 300.3(C)(2). HIGH VOLTAGE AND LOW VOLTAGE WIRING SHALL NOT BE INSTALLED IN THE SAME RACEWAY, CONDUIT, WIREWAY, PULL BOX, SPLICE CAN, HANDHOLE, OR MANHOLE.
4. THE CONTRACTOR SHALL SECURE, IDENTIFY AND PLACE ANY TEMPORARY EXPOSED WIRING IN CONDUIT TO PREVENT ELECTROCUTION AND FIRE IGNITION SOURCES AS PER THE REQUIREMENTS OF FFA AC 150/5370-2F OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION, PART 218, PARAGRAPH C.
5. BOND EACH WIREWAY TO VAULT GROUND BUS WITH #6 AWG COPPER BONDING JUMPER.
6. BOND EACH CCR FRAME/HOUSING TO VAULT GROUND BUS WITH #6 AWG COPPER BONDING JUMPER.
7. MAINTAIN SEPARATION OF HIGH VOLTAGE AND LOW VOLTAGE CIRCUITS. LOW VOLTAGE WIRING SHALL ENTER THE RESPECTIVE CCR AT THE LOW VOLTAGE SECTION. HIGH VOLTAGE WIRING SHALL ENTER THE RESPECTIVE CCR AT THE HIGH VOLTAGE SECTION.

APR 02, 2014, 9:04 AM HAGL000382
pw:\sps-svr206\hanson.dom\hanson_projects\Documents\13\jobs\13A0058\13A0058D\CAD\Airport\Sheet\E-101-VLT



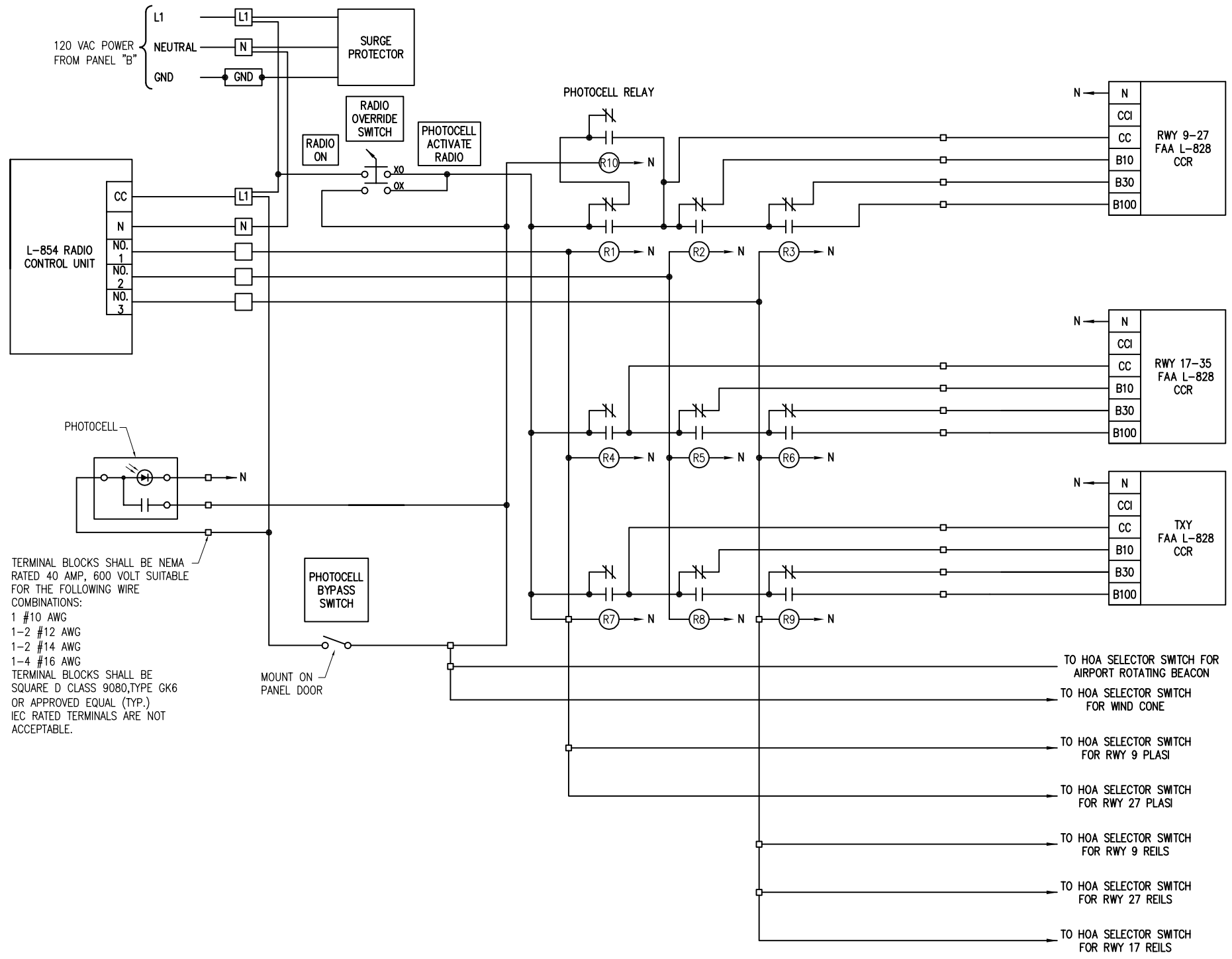
NOTES

1. ALL VAULT WORK, POWER OUTAGES, AND/OR SHUT DOWN OF EXISTING SYSTEMS SHALL BE COORDINATED WITH THE AIRPORT MANAGER. ONCE SHUT DOWN, THE CIRCUITS SHALL BE LABELED AS SUCH TO PREVENT ACCIDENTAL ENERGIZING OF THE RESPECTIVE CIRCUITS. ALL PERSONNEL SHALL FOLLOW U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) 29 CFR PART 1910 OCCUPATIONAL SAFETY & HEALTH STANDARDS FOR ELECTRICAL SAFETY AND LOCKOUT/TAGOUT PROCEDURES INCLUDING, BUT NOT LIMITED TO, 29 CFR SECTION 1910.147 THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT).
2. ALL ELECTRICAL EQUIPMENT SHALL BE INSTALLED IN CONFORMANCE WITH NFPA 70 - NATIONAL ELECTRICAL CODE (NEC) MOST CURRENT ISSUE IN FORCE, THE RESPECTIVE EQUIPMENT MANUFACTURER'S DIRECTIONS AND ALL OTHER APPLICABLE LOCAL CODES, LAWS, ORDINANCES AND REQUIREMENTS IN FORCE. ANY INSTALLATIONS WHICH VOID THE U.L. LISTING, ETL LISTING, (OR OTHER THIRD PARTY LISTING) AND/OR THE MANUFACTURER'S WARRANTY OF A DEVICE WILL NOT BE PERMITTED.
3. ALL CONDUCTORS/WIRING SHALL BE COPPER.
4. CONTRACTOR SHALL CONFIRM POWER REQUIREMENTS WITH THE ACTUAL NAMEPLATE ON EACH CONSTANT CURRENT REGULATOR (OR OTHER RESPECTIVE EQUIPMENT) AND ADJUST CIRCUIT BREAKER, WIRE SIZES & CONDUIT SIZES TO CONFORM WITH NEC & MANUFACTURER'S RECOMMENDATIONS WHERE APPLICABLE. WIRE SIZES SHOWN ON THE PLANS ARE MINIMUM.
5. HIGH VOLTAGE & LOW VOLTAGE CIRCUITS SHALL NOT BE INSTALLED IN THE SAME WIREWAY, CONDUIT, HANDHOLE, JUNCTION BOX, OR RACEWAY.
6. LTFMC DENOTES LIQUID TIGHT FLEXIBLE METAL CONDUIT UL LISTED, SUNLIGHT RESISTANT, & SUITABLE FOR GROUNDING. LIQUID TIGHT FLEXIBLE METAL CONDUIT AND ASSOCIATED FITTINGS SHALL BE U.L. LISTED TO MEET THE REQUIREMENTS OF NEC 350.6. LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS USED FOR FLEXIBILITY (INCLUDING CONNECTIONS TO CCR'S & TRANSFORMERS) SHALL REQUIRE AN EXTERNAL BONDING JUMPER OR INTERNAL EQUIPMENT GROUNDING CONDUCTOR PER NEC 350.60. EXTERNAL BONDING JUMPERS USED WITH CCR INSTALLATIONS SHALL BE #6 AWG COPPER (MINIMUM). DO NOT INSTALL LTFMC THAT IS NOT UL LISTED. CONFIRM LTFMC BEARS THE UL LABEL PRIOR TO INSTALLATION.
7. EQUIPMENT AND MATERIALS NOT LABELED AS EXISTING ARE NEW.
8. CONNECT EXISTING NAVAID FEEDER CIRCUIT CONDUCTORS TO NEW LIGHTING CONTACTOR PANEL WHERE NECESSARY SPLICE EXTENSION CABLES TO EXISTING CONDUCTORS TO INTERFACE TO LIGHTING CONTACTOR PANEL.
9. FURNISH AND INSTALL A 30AMP, 2-POLE BOLT-ON BREAKER WITH 10,000 AIC AT 120/240VAC FOR TAXIWAY "A" CCR; SQUARE D CAT. NO. QOB230, OR APPROVED EQUAL. FURNISH AND INSTALL A 60 AMP, 2-POLE BOLT-ON BREAKER WITH 10,000 AIC AT 120/240VAC FOR RUNWAY 17-35 CCR; SQUARE D CAT. NO. QOB260, OR APPROVED EQUAL. CONFIRM BREAKER SIZE REQUIREMENT WITH RESPECTIVE CCR MFR AND ADJUST TO MEET MFR RECOMMENDATIONS. EXISTING SPARE BREAKERS MAY BE USED WHERE THEY ARE PROPERLY SIZED FOR THE EQUIPMENT.

PROPOSED ELECTRICAL ONE LINE DIAGRAM FOR VAULT AND AIRFIELD

REVISION					
DATE					
CRAWFORD COUNTY AIRPORT ROBINSON CRAWFORD COUNTY, ILLINOIS					
S.B.C. PROJ.: 3-17-SBGP-XX					
<small>Hanson Proj. No. 13A0058 Filename: E-607-ELEC.dwg Scale: 1" = 50' Date: 03/07/14</small>					
LAYOUT	KNL	09/04/13	DRAWN	BAK	09/06/13
REVIEWED	CAH/KNL	03/07/14			
© Copyright Hanson Professional Services Inc. 2014 Hanson Professional Services Inc. 1525 South Sixth Street Springfield, Illinois 62703-2886 Ph: (217) 788-2450 Fax: (217) 788-2503 www.hanson-inc.com Offices Nationwide					
REPLACE MRL AND MITL SYSTEMS			PROPOSED ELECTRICAL ONE LINE DIAGRAM FOR VAULT AND AIRFIELD		
40 40 of 48 sheets					

MAR 25, 2014 2:06 PM H4GL000382
 pw:\sps-svc306\hanson\dom\hanson\Projects\Documents\13\jobs\13A0058\13A0058D\CAD\Work\Sheet\E-607-ELEC



TERMINAL BLOCKS SHALL BE NEMA RATED 40 AMP, 600 VOLT SUITABLE FOR THE FOLLOWING WIRE COMBINATIONS:
 1 #10 AWG
 1-2 #12 AWG
 1-2 #14 AWG
 1-4 #16 AWG
 TERMINAL BLOCKS SHALL BE SQUARE D CLASS 9080, TYPE GK6 OR APPROVED EQUAL (TYP.)
 IEC RATED TERMINALS ARE NOT ACCEPTABLE.

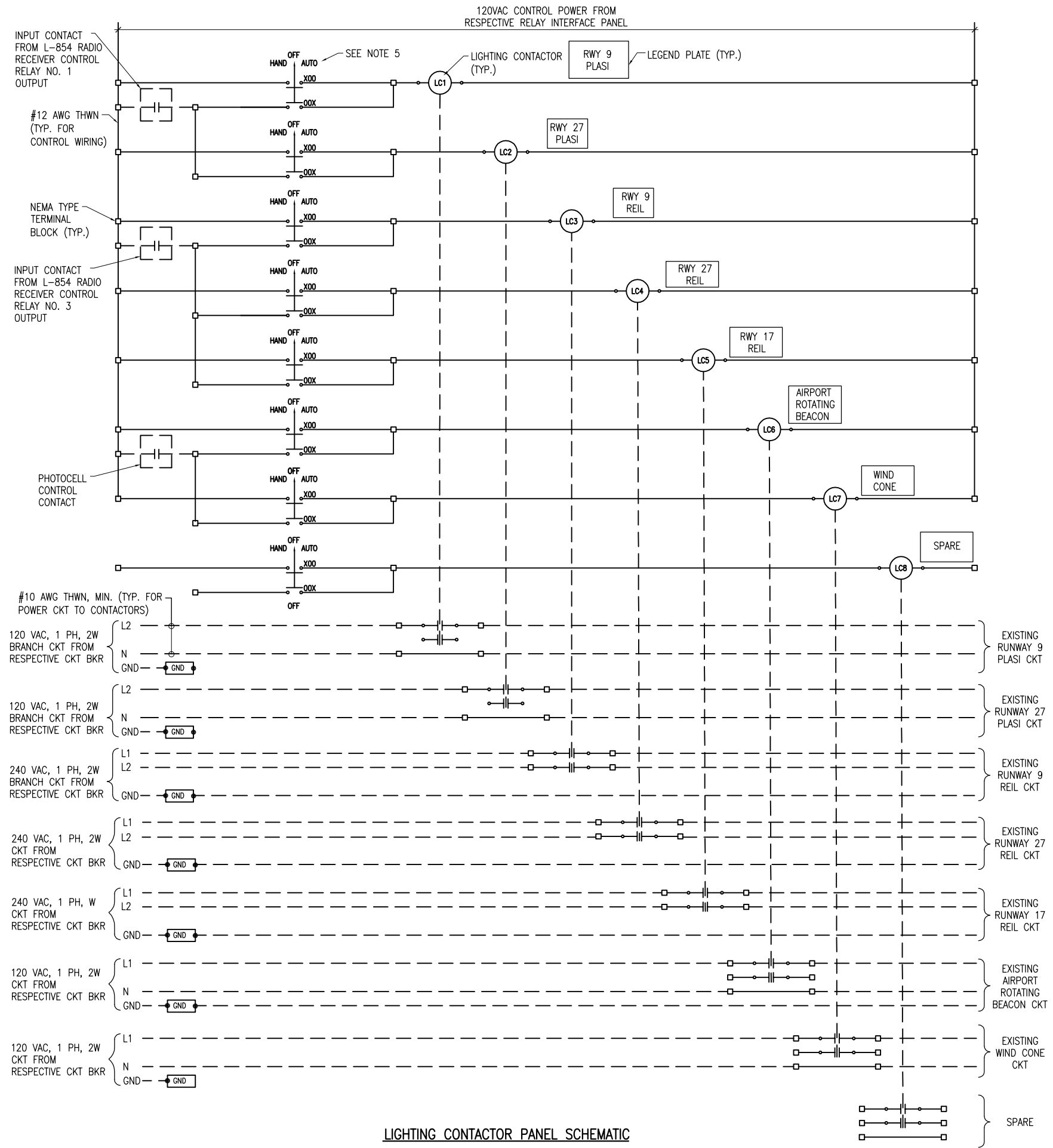
AIRFIELD LIGHTING CONTROL WIRING SCHEMATIC

NOTES:

- RELAY INTERFACE CONTROL PANEL SHALL BE MANUFACTURED BY AN FAA APPROVED L-821 PANEL BUILDER OR A UL 508 INDUSTRIAL CONTROL PANEL BUILDER, AND SHALL BE MANUFACTURED IN THE UNITED STATES TO COMPLY WITH THE AIRPORT IMPROVEMENT PROGRAM BUY AMERICAN PREFERENCE REQUIREMENTS. RELAY INTERFACE CONTROL PANEL SHALL BE A SEPARATE PANEL. DO NOT COMBINE WITH LIGHTING CONTACTOR PANEL.
- PANEL SHALL BE IN A NEMA 12 ENCLOSURE WITH HINGED COVER. DRILL HOLE IN BOTTOM OF ENCLOSURE TO ALLOW CONDENSATION TO ESCAPE.
- EXTERNAL CONTROL CABLE SHALL BE NO. 12 AWG COPPER, 600 VOLT CABLE. ALL PANEL INTERIOR CONTROL CABLE SHALL BE MINIMUM 16 AWG, COPPER, 600 VOLT CABLE.
- IN THE AUTOMATIC MODE OF OPERATION THE RUNWAY 9-27 CONSTANT CURRENT REGULATOR SHALL BE CONTROLLED BY THE PHOTOCELL & THE L-854 RADIO CONTROL UNIT IN THE FOLLOWING MANNER:
 PHOTOCELL - 10% BRIGHTNESS & ACTIVATE RADIO CONTROL
 5 CLICKS - 30% BRIGHTNESS
 7 CLICKS - 100% BRIGHTNESS
- IN THE AUTOMATIC MODE OF OPERATION THE RUNWAY 17-35 CCR AND THE TAXIWAY CCR WILL BE CONTROLLED BY THE PHOTOCELL & THE L-854 RADIO CONTROL UNIT IN THE FOLLOWING MANNER:
 PHOTOCELL -ACTIVATE RADIO CONTROL
 3 CLICKS -10% BRIGHTNESS
 5 CLICKS -30% BRIGHTNESS
 7 CLICKS -100% BRIGHTNESS
- THE RUNWAY 9-27 PLASI CIRCUITS WILL BE CONTROLLED IN THE AUTOMATIC MODE BY THE L-854 RADIO CONTROL UNIT IN THE FOLLOWING MANNER.
 CONFIRM CONTROL WITH AIRPORT MANAGER.
 3 CLICKS - ON
 5 CLICKS - REMAIN ON
 7 CLICKS - REMAIN ON
- THE RUNWAY 9-27 REIL CIRCUITS AND RUNWAY 17 REIL CIRCUIT WILL BE CONTROLLED IN THE AUTOMATIC MODE BY THE PHOTOCELL & THE L-854 RADIO CONTROL UNIT IN THE FOLLOWING MANNER.
 PHOTOCELL ACTIVATION ENABLES RADIO CONTROL
 3 CLICKS - OFF
 5 CLICKS - OFF
 7 CLICKS - ON
- THE RADIO OVERRIDE SWITCH WILL ACTIVATE L-854 RADIO CONTROL 24 HOURS PER DAY IN THE "RADIO ON" POSITION. THE PHOTOCELL WILL ACTIVATE RADIO CONTROL IN THE "PHOTOCELL ACTIVATE RADIO" POSITION.
- IN THE AUTOMATIC MODE OF OPERATION THE AIRPORT ROTATING BEACON AND WIND CONE SHALL BE ACTIVATED BY THE PHOTOCELL OR PHOTOCELL BYPASS SWITCH.
- EQUIPMENT GROUND WIRES SHALL BE INCLUDED WITH EACH BRANCH CIRCUIT & EACH CONTROL CIRCUIT.
- INCLUDE PHOTOCELL BYPASS SWITCH.
- SURGE PROTECTOR SHALL BE UL LISTED PER UL 1449, SUITABLE FOR 120 VAC, 1 PH, 2 WIRE PLUS GROUND SYSTEM WITH SURGE CURRENT RATING OF 40 KA (MIN.), 8x20 MICROSECOND WAVE, AND STATUS INDICATION LIGHTS IN A WEATHERPROOF HOUSING, JOSLYN MODEL 1260-21, OR APPROVED EQUAL. MAINTAIN LEADS AS SHORT & AS STRAIGHT AS POSSIBLE. INCLUDE MOUNTING BRACKET.
- INCLUDE EQUIPMENT GROUND BAR, ILSCO D167-12 OR APPROVED EQUAL.
- CONTROL RELAYS SHALL HAVE 10 AMP CONTACT RATINGS AT 240 VAC WITH 120 VAC COILS. PROVIDE 3 SPARE RELAYS FOR EACH TYPE USED IN THE RELAY INTERFACE PANEL.
- COLOR CODING FOR THE CONTROL WIRING TO EACH CONSTANT CURRENT REGULATOR SHALL BE CONSISTENT FOR ALL REGULATORS. COLOR CODING SHALL BE AS FOLLOWS:
 CC -RED
 10% -ORANGE
 30% -YELLOW
 100% -BLUE
 NEUTRAL -WHITE
 EQUIPT. GND -GREEN
 ALSO TAG THE CONTROL WIRES WITH THE RESPECTIVE DESIGNATION (CC, 10%, 30%, 100%)
- "N" DESIGNATES NEUTRAL CONNECTION OR NEUTRAL CONDUCTOR.

REVISION	
DATE	
CRAWFORD COUNTY AIRPORT ROBINSON CRAWFORD COUNTY, ILLINOIS	
IL PROJ.: RSY-4334 S.B.G. PROJ.: 3-17-SBGP-XX	
Hanson Proj. No. 13A0058	LAYOUT KNL 08/30/13
Filename E-606-ELEC.dwg	DRAWN BAK 09/03/13
Scale NOT TO SCALE	REVIEWED CAH/KNL 03/07/14
Date 03/07/14	
© Copyright Hanson Professional Services Inc. 2014 Hanson Professional Services Inc. 1525 South Sixth Street Springfield, Illinois 62703-2986 Ph: (217) 788-2450 Fax: (217) 788-2503 www.hanson-inc.com Offices Nationwide	
REPLACE MRL AND MITL SYSTEMS	AIRFIELD LIGHTING CONTROL WIRING SCHEMATIC
41 41 of 48 sheets	

MAR 25, 2014 2:05 PM H:\GLO00382
 pw:\spi-svr306\hanson.dom\hanson_projects\Documents\13\jobs\13A0058\13A0058D\CAD\Airport\Sheet\E-606-ELEC



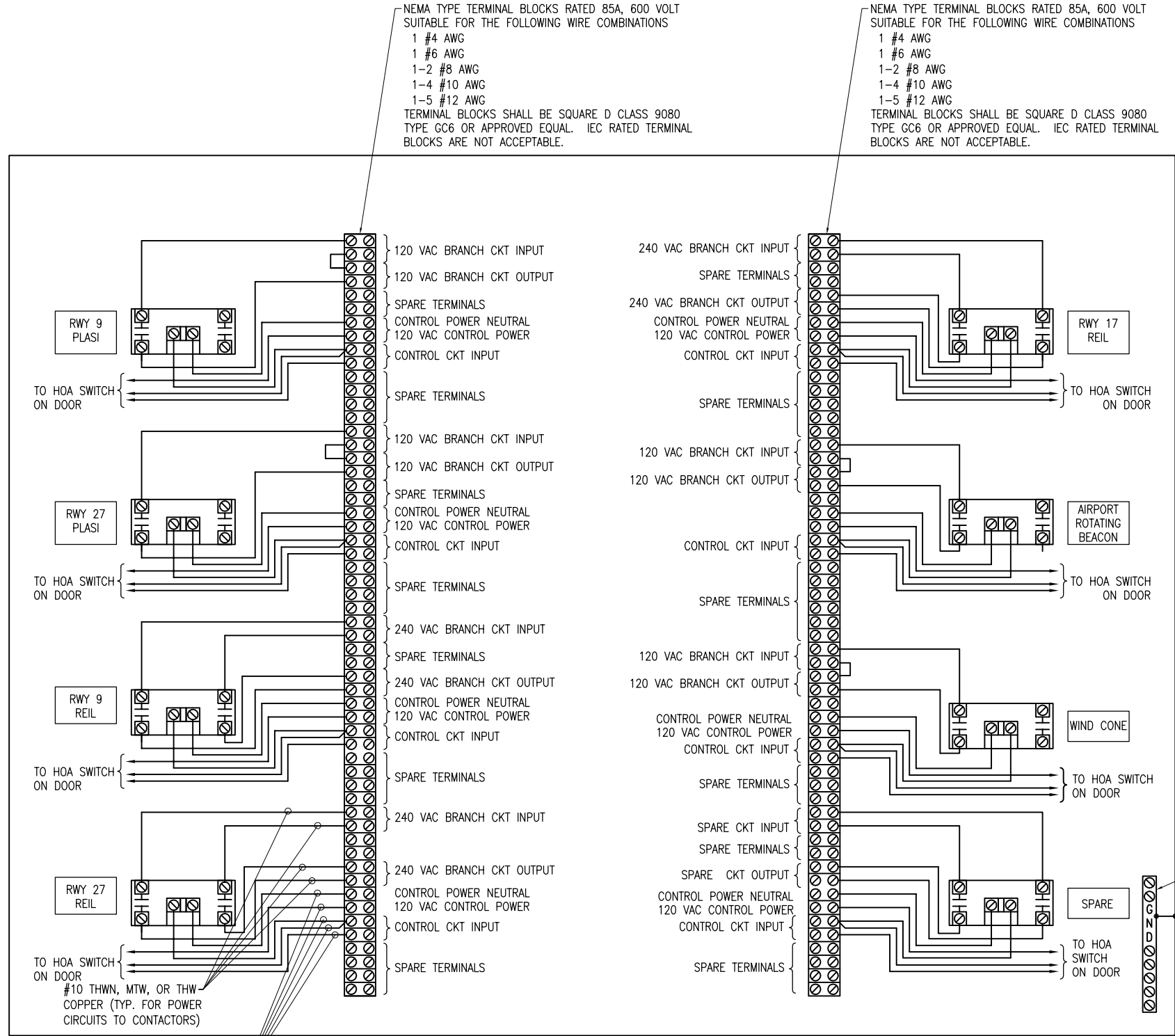
LIGHTING CONTACTOR PANEL SCHEMATIC

NOTES

- 15 AMP & 20 AMP INPUT POWER/BRANCH CIRCUITS SHALL BE #10 AWG COPPER THWN FROM THE RESPECTIVE POWER SOURCE TO THE LIGHTING CONTACTOR/RELAY PANEL. 25 AMP AND 30 AMP INPUT POWER/BRANCH CIRCUITS SHALL BE #8 AWG COPPER THWN (MIN.) FROM THE RESPECTIVE POWER SOURCE TO THE LIGHTING CONTACTOR/RELAY PANEL.
- INPUT CONTROL CIRCUITS SHALL BE #12 AWG COPPER THWN.
- FOR 120 VAC BRANCH CIRCUITS THE NEUTRAL CONDUCTOR SHALL NOT BE SWITCHED THROUGH THE RELAY CONTACTS. USE TERMINAL BLOCKS TO TRANSITION FROM VAULT BRANCH CIRCUIT WIRING TO FIELD WIRING.
- PROVIDE #10 AWG COPPER BONDING JUMPER FROM PANEL ENCLOSURE FRAME TO ENCLOSURE DOOR.
- PROVIDE 3-POSITION MAINTAINED CONTACT "HAND-OFF-AUTO" SELECTOR SWITCH FOR EACH LIGHTING CONTACTOR & MOUNT ON LIGHTING CONTACTOR PANEL ENCLOSURE DOOR. SELECTOR SWITCH SHALL BE SQUARE D CLASS 9001, TYPE KS43FBH13, OR APPROVED EQUAL. INCLUDE LEGEND PLATE TO IDENTIFY THE DEVICE CONTROLLED (EX: "WIND CONE" OR "AIRPORT ROTATING BEACON").

MAR 25, 2014 2:03 PM HAGL000382
pw:\spi-sv206\hanson.dom\hanson_projects\Documents\13\jobs\1340058\1340058D\CAD\Wiporth\Sheet\E-604-ELEC

REVISION	
DATE	
CRAWFORD COUNTY AIRPORT ROBINSON CRAWFORD COUNTY, ILLINOIS	
IL PROJ.: RSY-4334 S.B.C. PROJ.: 3-17-SBGP-XX	
Hanson Proj. No. 1340058	FILENAME E-604-ELEC.dwg
Scale NOT TO SCALE	Date 03/07/14
LAYOUT KNL 08/30/13	DRAWN BAK 09/03/13
REVIEWED CAH/KNL 03/07/14	
 © Copyright Hanson Professional Services Inc. 2014 Hanson Professional Services Inc. 1525 South Sixth Street Springfield, Illinois 62703-2886 Ph: (217) 788-2450 Fax: (217) 788-2503 www.hanson-inc.com Offices Nationwide	
REPLACE MRL AND MITL SYSTEMS	LIGHTING CONTACTOR PANEL SCHEMATIC
42 42 of 48 sheets	



NEMA TYPE TERMINAL BLOCKS RATED 85A, 600 VOLT SUITABLE FOR THE FOLLOWING WIRE COMBINATIONS
 1 #4 AWG
 1 #6 AWG
 1-2 #8 AWG
 1-4 #10 AWG
 1-5 #12 AWG
 TERMINAL BLOCKS SHALL BE SQUARE D CLASS 9080 TYPE GC6 OR APPROVED EQUAL. IEC RATED TERMINAL BLOCKS ARE NOT ACCEPTABLE.

NEMA TYPE TERMINAL BLOCKS RATED 85A, 600 VOLT SUITABLE FOR THE FOLLOWING WIRE COMBINATIONS
 1 #4 AWG
 1 #6 AWG
 1-2 #8 AWG
 1-4 #10 AWG
 1-5 #12 AWG
 TERMINAL BLOCKS SHALL BE SQUARE D CLASS 9080 TYPE GC6 OR APPROVED EQUAL. IEC RATED TERMINAL BLOCKS ARE NOT ACCEPTABLE.

NOTES

- 15 AMP & 20 AMP INPUT POWER/BRANCH CIRCUITS SHALL BE #10 AWG COPPER THWN FROM THE RESPECTIVE POWER SOURCE TO THE LIGHTING CONTACTOR/RELAY PANEL. 30 AMP INPUT POWER/BRANCH CIRCUITS SHALL BE #8 AWG COPPER THWN (MIN.) FROM THE RESPECTIVE POWER SOURCE TO THE LIGHTING CONTACTOR/RELAY PANEL.
- INPUT CONTROL CIRCUITS SHALL BE #12 AWG COPPER THWN.
- FOR 120 VAC BRANCH CIRCUITS THE NEUTRAL CONDUCTOR SHALL NOT BE SWITCHED THROUGH THE RELAY CONTACTS. USE TERMINAL BLOCKS TO TRANSITION FROM VAULT BRANCH CIRCUIT WIRING TO FIELD WIRING.
- PROVIDE #10 AWG COPPER BONDING JUMPER FROM PANEL ENCLOSURE FRAME TO ENCLOSURE DOOR.
- PROVIDE 3-POSITION MAINTAINED CONTACT "HAND-OFF-AUTO" SELECTOR SWITCH FOR EACH LIGHTING CONTACTOR & MOUNT ON LIGHTING CONTACTOR PANEL ENCLOSURE DOOR. SELECTOR SWITCH SHALL BE SQUARE D CLASS 9001, TYPE KS43FBH13, OR APPROVED EQUAL. INCLUDE LEGEND PLATE TO IDENTIFY THE DEVICE CONTROLLED (EX: "RWY 9 REILS" OR "RWY 9 PLASI").
- SEE "LIGHTING CONTACTOR SCHEMATIC" SHEET FOR ADDITIONAL INFORMATION ON WIRING. ALSO SEE "AIRFIELD LIGHTING CONTROL WIRING SCHEMATIC" SHEET FOR INFORMATION ON WIRING.
- INCLUDE LEGEND PLATE LABELED "NOTICE: CONTACTORS HAVE REMOTE LOCATED CONTROLS AND MAY ACTIVATE AT ANY TIME".
- 120/240 VAC PHASE "A" CONDUCTORS SHALL HAVE BLACK COLORED INSULATION. 120/240 VAC PHASE "B" CONDUCTORS SHALL HAVE RED COLORED INSULATION. NEUTRAL CONDUCTORS SHALL HAVE WHITE COLORED INSULATION. INSULATED EQUIPMENT GROUND WIRES SHALL HAVE GREEN COLORED INSULATION.
- CONTROL PANEL FOR AIRFIELD LIGHTING AND NAVAIDS SHALL BE MANUFACTURED BY A UL 508 INDUSTRIAL CONTROL PANEL BUILDER OR AN FAA APPROVED L-821 PANEL BUILDER, AND SHALL BE MANUFACTURED IN THE UNITED STATES TO COMPLY WITH THE AIRPORT IMPROVEMENT PROGRAM BUY AMERICAN PREFERENCE REQUIREMENTS. WHERE THE PANEL IS MANUFACTURED BY AN L-821 PANEL BUILDER IT SHALL BE LABELED AS AN L-821 PANEL.
- ALL FEEDER AND/OR BRANCH CIRCUIT CONDUCTORS OF THE SAME CIRCUIT (INCLUDING NEUTRAL CONDUCTORS AND EQUIPMENT GROUNDING CONDUCTORS) SHALL BE CONTAINED WITHIN THE SAME RACEWAY, AUXILIARY GUTTER, OR WIREWAY TO COMPLY WITH NEC 300.3(B). FOR VOLTAGE POWERED CIRCUITS TO AIRFIELD DEVICES, ROUTE ALL PHASE, NEUTRAL, AND EQUIPMENT GROUNDING CONDUCTORS FROM THE VAULT PANELBOARD TO THE LIGHTING/CONTACTOR PANEL AND THEN TO THE RESPECTIVE AIRFIELD DEVICE.

#12 THWN, MTW, OR THW COPPER (TYP. FOR CONTROL CIRCUITS TO LIGHTING CONTACTORS)

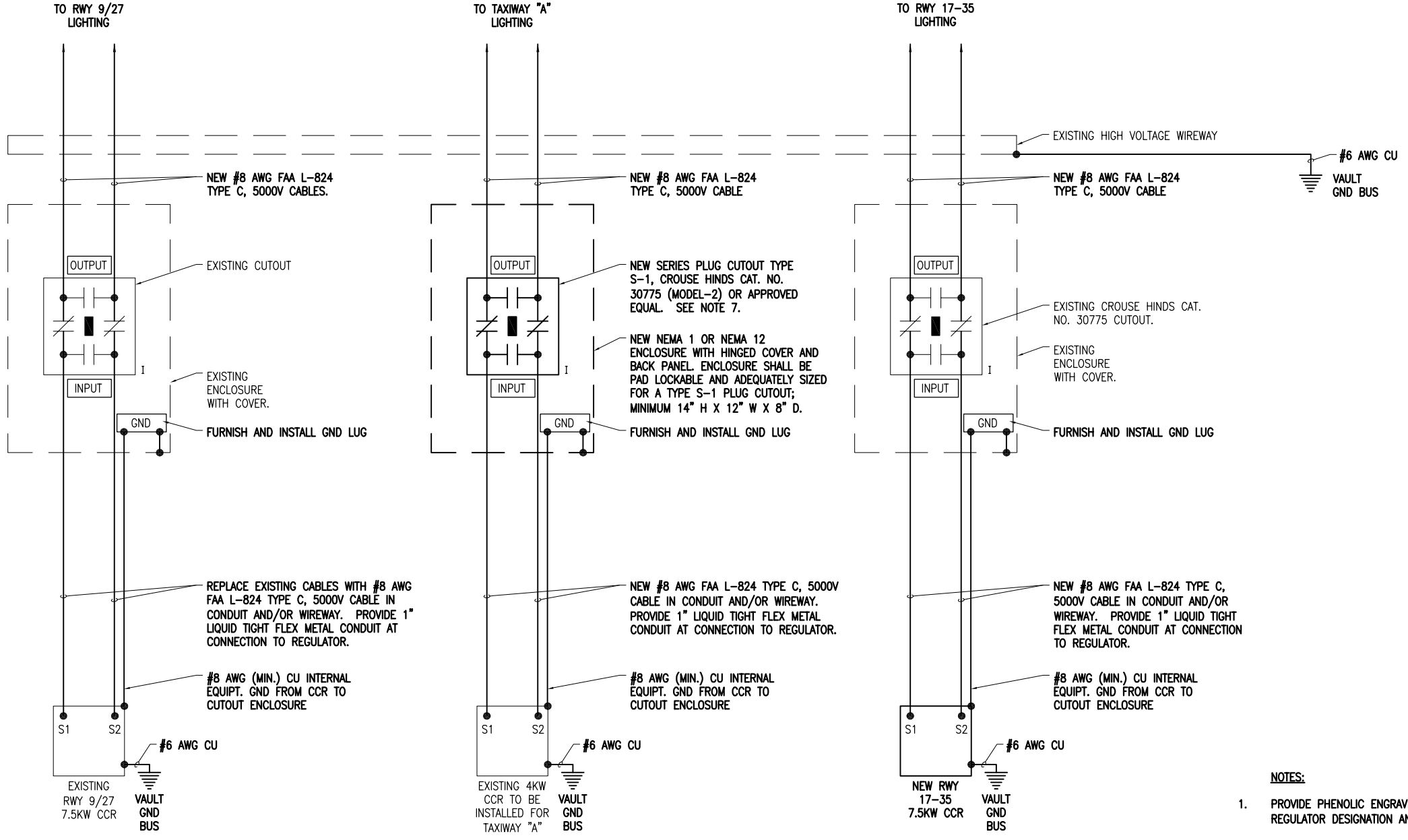
NEMA 12 ENCLOSURE WITH HINGED DOOR SIZED AS REQUIRED TO HOUSE LIGHTING CONTACTORS, CONTROL RELAY, TERMINAL BLOCKS, WIRING & INTERFACE TO EXISTING CONDUITS, APPROXIMATE 30"Hx24"Wx8"D. CONFIRM DIMENSIONS AND PROVIDE AN ENCLOSURE TO HOUSE EQUIPMENT AND TO FIT INSIDE VAULT SHELTER.

NOTE: EXISTING RELAY PANEL ENCLOSURE TO BE REPLACED IS 30"Hx24"Wx8"D.

COPPER EQUIPMENT GROUND BAR ADEQUATELY SIZED FOR ALL GROUND WIRES TO AND FROM LIGHTING CONTACTOR PANEL; ILSCO D167-12, OR APPROVED EQUAL. INSTALL ONE GROUND WIRE PER TERMINAL.

LIGHTING CONTACTOR PANEL DETAIL

REVISION					
DATE					
CRAWFORD COUNTY AIRPORT ROBINSON CRAWFORD COUNTY, ILLINOIS					
I.L. PROJ.: RSY-4334 S.B.C. PROJ.: 3-17-SBGP-XX					
Hanson Proj. No. 13A0058	Filename E-605-ELEC.dwg	Scale NOT TO SCALE	Date 03/07/14	LAYOUT KNL 08/30/13	DRAWN BAK 09/03/13
© Copyright Hanson Professional Services Inc. 2014 Hanson Professional Services Inc. 1525 South Sixth Street Springfield, Illinois 62703-2886 Ph: (217) 788-2450 Fax: (217) 788-2503 www.hanson-inc.com Offices Nationwide			REVIEWED CAH/KNL 03/07/14		
REPLACE MIRL AND MITL SYSTEMS	LIGHTING CONTACTOR PANEL SCHEMATIC				
43 43 of 48 sheets					



HIGH VOLTAGE WIRING SCHEMATIC



"DANGER - HIGH VOLTAGE" SIGN

FURNISH AND INSTALL "DANGER - HIGH VOLTAGE" LABELS/SIGNS FOR EACH CUTOUT ENCLOSURE, EACH CONSTANT CURRENT REGULATOR, AND THE HIGH VOLTAGE WIREWAY, TO COMPLY WITH FAA AC 150/5340-26B "MAINTENANCE OF AIRPORT VISUAL AID FACILITIES".

LABELS SHALL BE APPROXIMATELY 4" X 6" OR 5" X 7".

LEGEND

"I" DENOTES PLUG CUTOUT WITH PLUG INSERTED

"P" DENOTES PLUG CUTOUT WITH PLUG PULLED

"CCR" DENOTES CONSTANT CURRENT REGULATOR

- NOTES:**
1. PROVIDE PHENOLIC ENGRAVED LEGEND PLATES FOR EACH CONSTANT CURRENT REGULATOR NOTING THE REGULATOR DESIGNATION AND THE RUNWAY AND/OR TAXIWAY SERVED.
 2. EACH PLUG CUTOUT CABINET SHALL BE FURNISHED WITH A PHENOLIC ENGRAVED LEGEND PLATE THAT IDENTIFIES THE RESPECTIVE CIRCUIT OR REGULATOR. INCLUDE AN ADDITIONAL LEGEND PLATE LABELED "CAUTION OPERATE CUTOUTS WITH CCR SHUT OFF". FURNISH & INSTALL A WARNING LABEL FOR CUTOUT ENCLOSURE TO WARN PERSONS OF POTENTIAL ARC FLASH HAZARDS, PER THE REQUIREMENTS OF NEC 110.16 "FLASH PROTECTION".
 3. PROVIDE PHENOLIC ENGRAVED LEGEND PLATES FOR EACH CUTOUT TO IDENTIFY THE RESPECTIVE CUTOUT INPUT CONNECTION AND THE RESPECTIVE CUTOUT OUTPUT CONNECTION.
 4. BOND EACH REGULATOR FRAME TO VAULT GROUND BUS WITH A DEDICATED #6 AWG COPPER BONDING JUMPER.
 5. PROVIDE ADEQUATE WORKING SPACE IN FRONT OF EACH CUTOUT ENCLOSURE TO MEET NEC CLEARANCE REQUIREMENTS..
 6. LIQUID TIGHT FLEXIBLE METAL CONDUIT AND ASSOCIATED FITTINGS SHALL BE U.L. LISTED TO MEET THE REQUIREMENTS OF NEC 350.6, SUITABLE FOR GROUNDING AND SUNLIGHT RESISTANT. LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS USED FOR FLEXIBILITY (INCLUDING CONNECTIONS TO CCR'S & TRANSFORMERS) SHALL REQUIRE AN EXTERNAL BONDING JUMPER OR INTERNAL EQUIPMENT GROUNDING CONDUCTOR PER NEC 350.60. EXTERNAL BONDING JUMPERS USED WITH CCR INSTALLATIONS SHALL BE #6 AWG COPPER (MINIMUM). DO NOT INSTALL LIQUID TIGHT FLEXIBLE METAL CONDUIT THAT IS NOT UL LISTED. CONFIRM LIQUID TIGHT FLEXIBLE METAL CONDUIT BEARS THE UL LABEL PRIOR TO INSTALLING IT.
 7. SERIES PLUG CUTOUTS SHALL BE TYPE S-1, RATED 5000 VOLTS, 20-AMP, AND SHALL COMPLY WITH FAA AC 150/5340-4C. SERIES PLUG CUTOUTS SHALL BE RATED SUITABLE FOR NORMAL OPERATION WITH HANDLE REMOVED OR HANDLE INSERTED. CUTOUTS SHALL DISCONNECT THE INPUT FROM THE OUTPUT, SHORT THE INPUT TERMINALS, AND SHORT THE OUTPUT TERMINALS WHEN THE HANDLE/PLUG IS REMOVED. SERIES PLUG CUTOUTS SHALL BE CROUSE-HINDS CAT. NO. 30775, OR APPROVED EQUAL. THE RESPECTIVE MANUFACTURER SHALL CERTIFY IN WRITING THAT THEIR CUTOUT IS SUITABLE AND RATED FOR THE RESPECTIVE APPLICATION.
 8. HIGH VOLTAGE & LOW VOLTAGE CIRCUITS SHALL NOT BE INSTALLED IN THE SAME WIREWAY.

REVISION	
DATE	

CRAWFORD COUNTY AIRPORT
ROBINSON
CRAWFORD COUNTY, ILLINOIS

IL. PROJ.: RSY-4334 S.B.C. PROJ.: 3-17-SBGP-XX

Hanson Proj. No. 13A0058	FILENAME E-603-ELEC.dwg	Scale NOT TO SCALE	Date 03/07/14
LAYOUT	KNL	08/23/13	
DRAWN	BAK	08/26/13	
REVIEWED	CAH/KNL	03/07/14	

HANSON
Professional Services Inc. 2014
1525 South Sixth Street
Springfield, Illinois 62703-2986
Ph: (217) 788-2450 Fax: (217) 788-2503
www.hanson-inc.com
Offices Nationwide

REPLACE MRL AND MITL SYSTEMS

HIGH VOLTAGE WIRING SCHEMATICS

MAR 25, 2014, 2:02 PM HAGL000382
pw:\sps-sv306\hanson\Documents\13A0058\13A0058D\CAD\Work\Sheet\E-603-ELEC

LEGEND PLATE SCHEDULE	
DEVICE	LABEL
LIGHTING CONTACTOR PANEL	CONTROL PANEL FOR AIRFIELD NAVAIDS
LIGHTING CONTACTOR PANEL	NOTICE CONTACTORS HAVE REMOTE LOCATED CONTROLS AND MAY ACTIVATE AT ANY TIME
RADIO RELAY INTERFACE PANEL	RADIO RELAY INTERFACE PANEL
RUNWAY 9-27 CCR	RWY 9-27
TAXIWAY A CCR	TAXIWAY A
RUNWAY 17-35	RWY 17-35
CUTOUT FOR RUNWAY 9-27	RWY 9-27
CUTOUT FOR TAXIWAY A	TAXIWAY A

LEGEND PLATE SCHEDULE CONTINUED	
DEVICE	LABEL
CUTOUT FOR RUNWAY 17-35	RWY 17-35
EACH CUTOUT ENCLOSURE (PROVIDE 3 LEGEND PLATES)	CAUTION OPERATE CUTOUT WITH CCR SHUT OFF
LOW VOLTAGE WIREWAY	LOW VOLTAGE
HIGH VOLTAGE WIREWAY	HIGH VOLTAGE
EACH CUTOUT INPUT SIDE CONNECTION (PROVIDE 3 LEGEND PLATES)	INPUT
EACH CUTOUT OUTPUT SIDE CONNECTION (PROVIDE 3 LEGEND PLATES)	OUTPUT
VAULT GROUND BUS (PROVIDE 2 LEGEND PLATES 1/2" HIGH WHITE LETTERS GREEN BACKGROUND; INSTALL ABOVE OR BELOW GROUND BUS)	VAULT GROUND BUS
GROUNDING ELECTRODE CONDUCTORS TERMINATED ON VAULT GROUND BUS. (PROVIDE 3 LEGEND PLATES & SECURE TO CONDUCTORS WITH NYLON STRING OR CABLE TIES)	DO NOT DISCONNECT

NOTE: LEGEND PLATES SHALL BE WEATHERPROOF ENGRAVED PLASTIC OR PHENOLIC MATERIAL, 1/4" HIGH BLACK LETTERS ON A WHITE BACKGROUND UNLESS NOTED OTHERWISE. SECURE WITH WEATHERPROOF ADHESIVE AND MACHINE SCREWS. FURNISH ADDITIONAL LEGEND PLATES WHERE REQUIRED BY CODE, FOR ADDITIONAL EQUIPMENT, AS DETAILED HEREIN ON THE PLANS, AND AS NOTED IN THE SPECIAL PROVISION SPECIFICATIONS.

FURNISH & INSTALL A WEATHERPROOF WARNING LABEL FOR EACH SAFETY SWITCH, PANELBOARD, LOAD CENTER, CUTOUT, & CONTROL PANEL TO WARN PERSONS OF POTENTIAL ELECTRIC ARC FLASH HAZARDS, PER THE REQUIREMENTS OF NEC 110.16 "FLASH PROTECTION". LABELS SHALL BE HAZARD COMMUNICATION SYSTEMS, LLC (190 OLD MILFORD RD., BOX 1174, MILFORD, PA 18337, PHONE: 1-877-748-0244) PART NO. H6010-9VWHBJ OR APPROVED EQUAL.



"DANGER - HIGH VOLTAGE KEEP OUT" SIGN

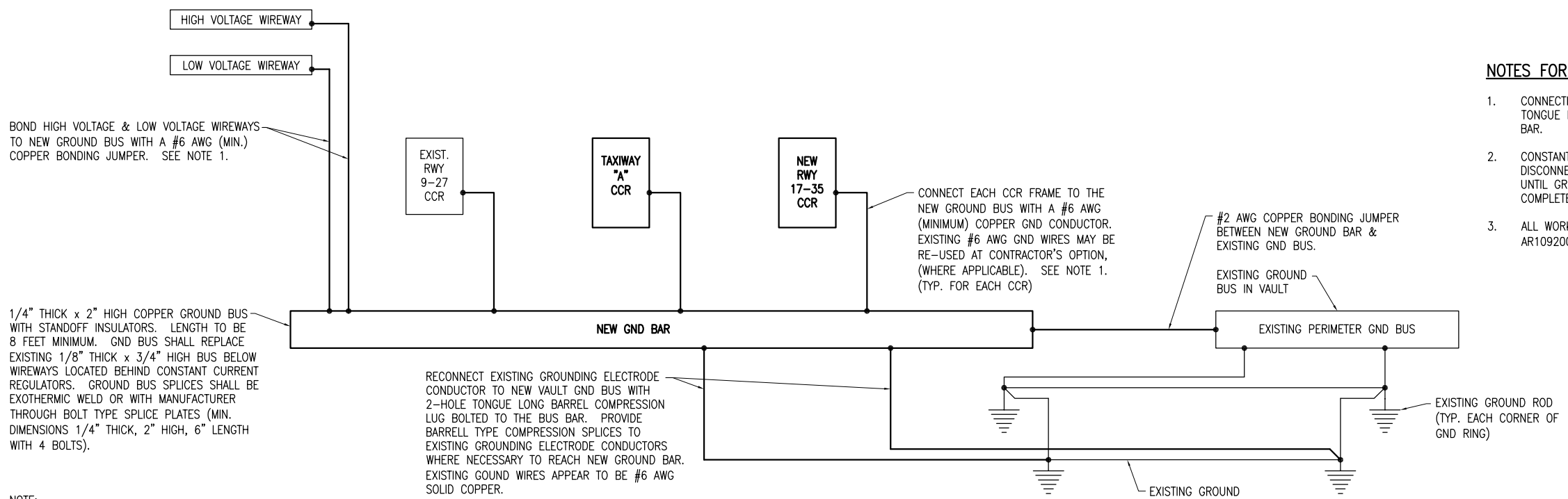
PROVIDE WARNING SIGN ON VAULT EXTERIOR DOORS LABELED "DANGER - HIGH VOLTAGE - KEEP OUT" PER THE REQUIREMENTS OF NEC 110.34 (C). PROVIDE MINIMUM OF 2 SIGNS (ONE ON EACH DOOR TO THE VAULT). SIGNS SHALL BE APPROXIMATELY 10" X 14"W.



"DANGER - HIGH VOLTAGE" SIGN

FURNISH AND INSTALL "DANGER - HIGH VOLTAGE" LABELS/SIGNS FOR EACH CUTOUT ENCLOSURE, EACH CONSTANT CURRENT REGULATOR, AND THE HIGH VOLTAGE WIREWAY, TO COMPLY WITH FAA AC 150/5340-26B "MAINTENANCE OF AIRPORT VISUAL AID FACILITIES". LABELS SHALL BE APPROXIMATELY 4" X 6" OR 5" X 7".

REVISION DATE	
CRAWFORD COUNTY AIRPORT ROBINSON CRAWFORD COUNTY, ILLINOIS	IL. PROJ.: RSY-4334 S.B.G. PROJ.: 3-17-SBGP-XX
Hanson Proj. No. 13A0058 Filename: E-608-SCHD.dwg Scale: NOT TO SCALE Date: 03/07/14	LAYOUT: KNL 09/05/13 DRAWN: BAK 09/06/13 REVIEWED: CAH/KNL 03/07/14
© Copyright Hanson Professional Services Inc. 2014 Hanson Professional Services Inc. 1525 South Sixth Street Springfield, Illinois 62703-2986 Ph: (217) 788-2450 Fax: (217) 788-2503 www.hanson-inc.com Offices Nationwide	REPLACE MRL AND MITL SYSTEMS LEGEND PLATE SCHEDULES
45	
45 of 48 sheets	



BOND HIGH VOLTAGE & LOW VOLTAGE WIREWAYS TO NEW GROUND BUS WITH A #6 AWG (MIN.) COPPER BONDING JUMPER. SEE NOTE 1.

1/4" THICK x 2" HIGH COPPER GROUND BUS WITH STANDOFF INSULATORS. LENGTH TO BE 8 FEET MINIMUM. GND BUS SHALL REPLACE EXISTING 1/8" THICK x 3/4" HIGH BUS BELOW WIREWAYS LOCATED BEHIND CONSTANT CURRENT REGULATORS. GROUND BUS SPLICES SHALL BE EXOTHERMIC WELD OR WITH MANUFACTURER THROUGH BOLT TYPE SPLICE PLATES (MIN. DIMENSIONS 1/4" THICK, 2" HIGH, 6" LENGTH WITH 4 BOLTS).

RECONNECT EXISTING GROUNDING ELECTRODE CONDUCTOR TO NEW VAULT GND BUS WITH 2-HOLE TONGUE LONG BARREL COMPRESSION LUG BOLTED TO THE BUS BAR. PROVIDE BARRELL TYPE COMPRESSION SPLICES TO EXISTING GROUNDING ELECTRODE CONDUCTORS WHERE NECESSARY TO REACH NEW GROUND BAR. EXISTING GOUND WIRES APPEAR TO BE #6 AWG SOLID COPPER.

CONNECT EACH CCR FRAME TO THE NEW GROUND BUS WITH A #6 AWG (MINIMUM) COPPER GND CONDUCTOR. EXISTING #6 AWG GND WIRES MAY BE RE-USED AT CONTRACTOR'S OPTION, (WHERE APPLICABLE). SEE NOTE 1. (TYP. FOR EACH CCR)

#2 AWG COPPER BONDING JUMPER BETWEEN NEW GROUND BAR & EXISTING GND BUS.

EXISTING GROUND ROD (TYP. EACH CORNER OF GND RING)

NOTE:
WHERE SPACE RESTRICTS THE USE OF STANDOFF INSULATORS THE INSULATORS MAY BE ELIMINATED.

NOTES FOR CCR GROUND BUS RISER

1. CONNECTIONS TO GROUND BUS BARS SHALL BE WITH 2-HOLE TONGUE LONG BARREL COMPRESSION LUGS BOLTED TO THE BUS BAR.
2. CONSTANT CURRENT REGULATORS SHALL BE SHUT OFF PRIOR TO DISCONNECTING EXISTING FRAME GROUNDS AND SHALL REMAIN OFF UNTIL GROUNDING UPGRADES AND NEW GROUND CONNECTIONS ARE COMPLETED.
3. ALL WORK SHOWN ON THIS SHEET SHALL BE PAID FOR UNDER ITEM AR109200 "INSTALL ELECTRICAL EQUIPMENT" PER LUMP SUM.

CCR GROUND BUS RISER

REVISION	DATE

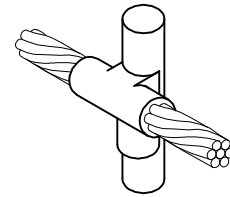
CRAWFORD COUNTY AIRPORT
ROBINSON
CRAWFORD COUNTY, ILLINOIS
IL. PROJ.: RSY-4334 S.B.C. PROJ.: 3-17-SBGP-XX

Hanson Proj. No. 13A0058	File Name E-602-ELEC.dwg	Scale NOT TO SCALE	Date 03/07/14
LAYOUT	KNL	08/23/13	
DRAWN	BAK	08/26/13	
REVIEWED	CAH/KNL	03/07/14	

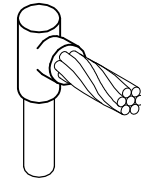
HANSON
© Copyright Hanson Professional Services Inc. 2014
Hanson Professional Services Inc.
1525 South Sixth Street
Springfield, Illinois 62703-2886
Ph: (217) 788-2450 Fax: (217) 788-2503
www.hanson-inc.com
Offices Nationwide

REPLACE MIRL AND MITL SYSTEMS
CCR GROUND BUS RISER

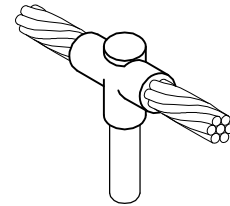
MAR 25, 2014, 2:01 PM HAGL000382
pw:\spi-svr306\hanson.dom\hanson Projects\Documents\13\jobs\13A0058\13A0058D\CAD\Work\Sheet\E-602-ELEC



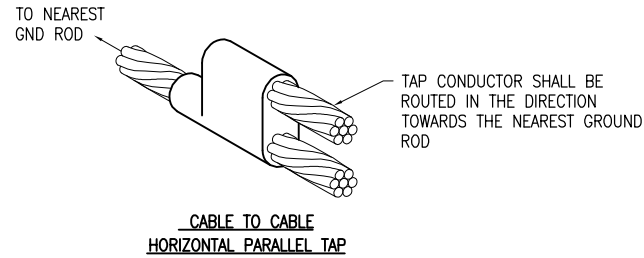
CABLE TO GROUND ROD



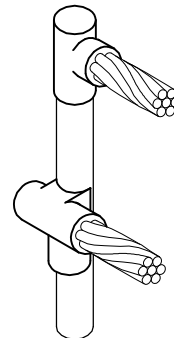
CABLE TO GROUND ROD



CABLE TO GROUND ROD



CABLE TO CABLE HORIZONTAL PARALLEL TAP

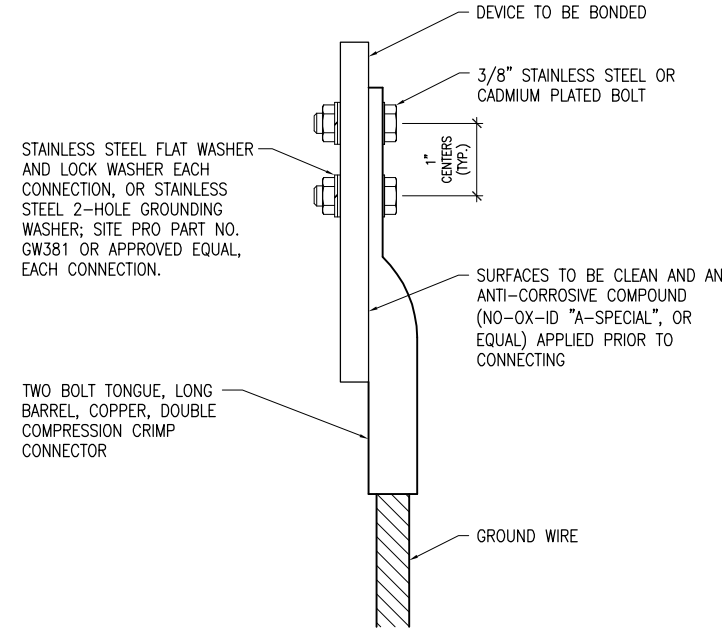


CABLES TO GROUND ROD

DETAIL NOTES

- ALL BELOW GRADE CONNECTIONS TO GROUND RODS & GROUND RING CONDUCTORS SHALL BE EXOTHERMIC WELD TYPE CONNECTIONS. EXOTHERMIC WELDS SHALL BE CADWELD AS MANUFACTURED BY ERICO PRODUCTS, SOLON, OHIO, ULTRAWELD AS MANUFACTURED BY HARGER LIGHTNING PROTECTION & GROUNDING EQUIPMENT, GRAYSLAKE, IL, OR THERMOWELD AS MANUFACTURED BY CONTINENTAL INDUSTRIES, TULSA, OKLAHOMA. VERIFY PROPER SIZES, MOLDS, TYPES, AND REQUIREMENTS FOR THE RESPECTIVE APPLICATION WITH THE MANUFACTURER, AND INSTALL PER THEIR DIRECTIONS.
- FOR APPLICATIONS TO GALVANIZED STEEL OR PAINTED STEEL, REMOVE GALVANIZING AND/OR PAINT & CLEAN THE SURFACE TO EXPOSE BARE STEEL BEFORE MAKING EXOTHERMIC WELD CONNECTION.
- INDIVIDUAL GROUNDING ELECTRODE CONDUCTORS SHALL NOT BE INSTALLED IN METAL CONDUIT. INSTALL GROUNDING ELECTRODE CONDUCTORS IN SCHED 40 PVC CONDUIT AS REQUIRED IN FOUNDATIONS, FOR PROTECTION, WHERE ENTERING ENCLOSURES, ETC. WHERE PLASTIC CONDUIT IS USED FOR INDIVIDUAL GROUND WIRES, DO NOT COMPLETELY ENCIRCLE THE CONDUIT WITH FERROUS AND/OR MAGNETIC MATERIALS. WHERE METAL CLAMPS ARE INSTALLED USE NYLON BOLTS, NUTS, WASHERS, & SPACERS TO INTERRUPT A COMPLETE METALLIC PATH FROM ENCIRCLING THE CONDUIT.

EXOTHERMIC WELD DETAILS

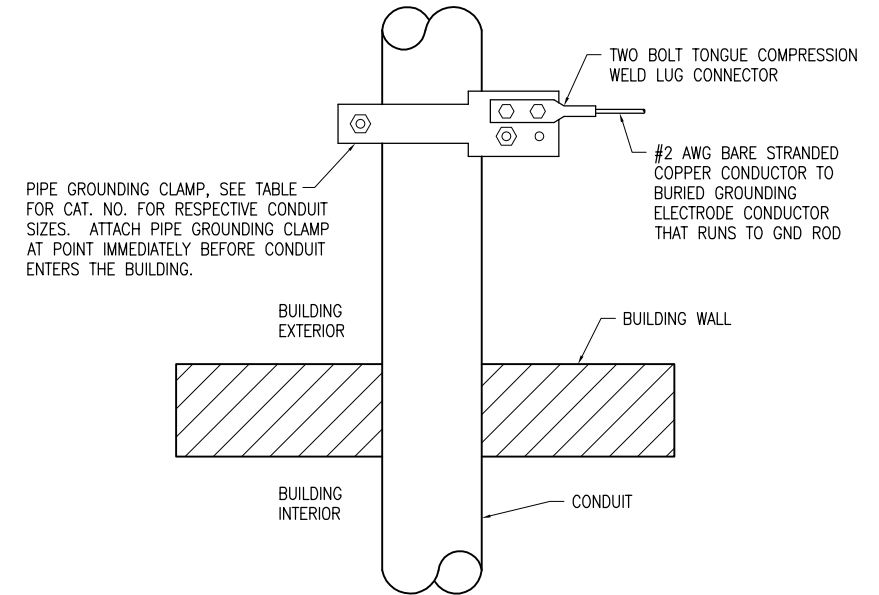


2 HOLE LONG BARREL COMPRESSION LUG TABLE			
WIRE SIZE	BURNDY CAT. NO.	THOMAS & BETTS CAT. NO.	PENN-UNION CAT. NO.
#8 AWG STRANDED	YA8C-2TC38	256-30695-1157	BBLU-8D-2TC38
#6 AWG SOLID	YA8C-2TC38 OR YGA6C-2TC38E2G1		
#6 AWG STRANDED	YA6C-2TC38	256-30695-1158	BBLU-6D-2TC38
#4 AWG STRANDED	YA4C-2TC38	256-30695-1159	BBLU-4D-2TC38
#2 AWG STRANDED	YA2C-2TC38	256-30695-1160	BBLU-2D-2TC38
#2 AWG SOLID	YA3C-2TC38	256-30695-1160	BBLU-3D-2TC38
#1/0 AWG STRANDED	YA25-2TC38	256-30695-1162	BBLU-1/0D-2TC38
#2/0 AWG STRANDED	YA26-2TC38	256-30695-1116	BBLU-2/0D-2TC38
#3/0 AWG STRANDED	YA27-2TC38	54816BE	BBLU-3/0D-2TC38
#4/0 AWG STRANDED	YA28-2TC38	256-30695-1117	BBLU-4/0D-2TC38

NOTES

- ALL CONNECTIONS TO GROUND BUS BAR SHALL BE WITH 2 HOLE TONGUE LONG BARREL COMPRESSION LUGS BOLTED TO THE BUS BAR.
- GROUND WIRE CONNECTIONS TO EQUIPMENT SHALL BE WITH 2 HOLE TONGUE LONG BARREL COMPRESSION LUGS BOLTED TO THE DEVICE OR WITH THE RESPECTIVE EQUIPT MANUFACTURER'S LUG OR TERMINAL WHERE APPLICABLE.
- GROUNDING ELECTRODE CONDUCTORS, BONDING JUMPERS, & INDIVIDUAL GROUND WIRES SHALL NOT BE INSTALLED IN METAL CONDUIT. WHERE PLASTIC CONDUIT IS USED FOR INDIVIDUAL GROUND WIRES, DO NOT COMPLETELY ENCIRCLE THE CONDUIT WITH FERROUS AND/OR MAGNETIC MATERIALS. WHERE METAL CLAMPS ARE INSTALLED USE NYLON BOLTS, NUTS, WASHERS, & SPACERS TO INTERRUPT A COMPLETE METALLIC APTH FROM ENCIRCLING THE CONDUIT.
- ALL CONNECTIONS SHALL BE COATED WITH A CORROSION PREVENTATIVE COMPOUND (SANCHEM INC. NO-OX-ID "A-SPECIAL", BURNDY PENETROX E, OR EQUAL) BEFORE JOINING. ALL COPPER BUS BARS SHALL BE CLEANED PRIOR TO MAKING CONNECTIONS TO REMOVE SURFACE OXIDATION. CLEAN SURFACES, OF RESPECTIVE DEVICES TO BE BONDED, TO BARE METAL, PER NEC 250-12.

GROUNDING LUG CONNECTION DETAIL



PIPE GROUNDING CLAMP TABLE	
BURNDY CAT. NO.	CONDUIT SIZE
GAR3902TC	1/2" - 1"
GAR3903TC	1 1/4" - 2"
GAR3904TC	2 1/2" - 3 1/2"
GAR3905TC	4" - 5"
GAR3906TC	6"
GAR3907TC	8"

NOTES

- EXTERIOR CONDUIT GROUNDING IS REQUIRED FOR THE PHOTOCELL CONDUIT, RADIO ANTENNA CONDUIT, & OTHER CONDUITS EXTENDING TO THE ROOF LEVEL.
- CONNECTIONS TO BURIED GROUNDING ELECTRODE CONDUCTOR SHALL BE EXOTHERMIC WELD.

EXTERIOR CONDUIT GROUNDING DETAIL

MAR 25, 2014 1:59 PM HAGL000382 p:\sps-svr306\hanson.dom\hanson_projects\Documents\13\jobs\1340058\1340058D\CAD\Wipport\Sheet\E-505-ELEC

REVISION	DATE

CRAWFORD COUNTY AIRPORT
ROBINSON
CRAWFORD COUNTY, ILLINOIS
IL PROJ.: RSY-4334 S.B.C. PROJ.: 3-17-SBGP-XX

Hanson Proj. No. 1340058	FILENAME E-505-ELEC.dwg	Scale NOT TO SCALE	Date 03/07/14
LAYOUT	KNL	BAK	08/19/13
DRAWN	KNL	BAK	08/19/13
REVIEWED	CAH/KNL		03/07/14

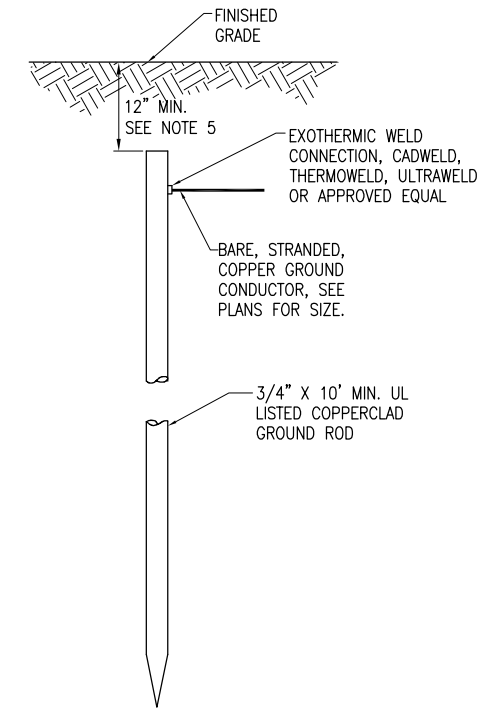
HANSON
© Copyright Hanson Professional Services Inc. 2014
Hanson Professional Services Inc.
1525 South Sixth Street
Springfield, Illinois 62703-2886
Ph: (217) 788-2450 Fax: (217) 788-2503
www.hanson-inc.com
Offices Nationwide

REPLACE MRL AND MITL SYSTEMS
GROUNDING DETAILS

GROUNDING NOTES

- THE CONTRACTOR SHALL FURNISH AND INSTALL ALL GROUNDING AS MAY BE NECESSARY OR REQUIRED TO MAKE A COMPLETE GROUNDING SYSTEM AS REQUIRED BY THE LATEST NATIONAL ELECTRICAL CODE (NFPA 70) IN FORCE AND FAA-STD-019e (LIGHTNING AND SURGE PROTECTION, GROUNDING, BONDING, AND SHIELDING REQUIREMENTS FOR FACILITIES AND ELECTRONIC EQUIPMENT). THE RELIABILITY OF THE GROUNDING SYSTEM IS DEPENDENT ON CAREFUL, PROPER INSTALLATION AND CHOICE OF MATERIALS. IMPROPER PREPARATION OF SURFACES TO BE JOINED TO MAKE AN ELECTRICAL PATH, LOOSE JOINTS OR CORROSION CAN INTRODUCE IMPEDANCE THAT WILL SERIOUSLY IMPAIR THE ABILITY OF THE GROUND PATH TO PROTECT PERSONNEL AND EQUIPMENT AND TO ABSORB TRANSIENTS THAT CAN CAUSE NOISE IN COMMUNICATIONS CIRCUITS. THE FOLLOWING FUNCTIONS ARE PARTICULARLY IMPORTANT TO ENSURE A RELIABLE GROUND SYSTEM:
- FURNISH AND INSTALL GROUND RODS AS DETAILED HEREIN. GROUND RODS FOR AIRFIELD LIGHTING (RUNWAY LIGHTING, TAXIWAY LIGHTING, TAXI GUIDANCE SIGNS, & DISTANCE REMAINING SIGNS) SHALL BE MINIMUM 3/4-IN. DIAMETER BY 10-FT LONG, UL-LISTED COPPER CLAD WITH 10-MIL MINIMUM COPPER COATING. GROUND RODS FOR OTHER APPLICATIONS SHALL BE MINIMUM 3/4-IN. DIAMETER BY 10-FT LONG, UL-LISTED, COPPER CLAD WITH 10-MIL MINIMUM COPPER COATING. GROUND RODS SHALL BE SPACED OR AS DETAILED ON THE RESPECTIVE PLANS, AND IN NO CASE SPACED LESS THAN ONE ROD LENGTH APART. ALL CONNECTIONS TO GROUND RODS AND THE GROUND RING SHALL BE MADE WITH EXOTHERMIC WELD TYPE CONNECTORS, CADWELD BY ERICO PRODUCTS, INC., SOLON, OHIO, (PHONE 1-800-248-9353), THERMOWELD BY CONTINENTAL INDUSTRIES, INC., TULSA, OKLAHOMA (PHONE 918-663-1440) OR ULTRAWELD BY HARGER, GRAYSLAKE, ILLINOIS (PHONE 1-800-842-7437) OR APPROVED EQUAL. EXOTHERMIC WELD CONNECTIONS SHALL BE INSTALLED IN CONFORMANCE WITH THE RESPECTIVE MANUFACTURER'S DIRECTIONS USING MOLDS AS REQUIRED FOR EACH RESPECTIVE APPLICATION. BOLTED CONNECTIONS WILL NOT BE PERMITTED AT GROUND RODS OR AT BURIED GROUNDING ELECTRODE CONDUCTORS.
- CONTRACTOR SHALL TEST EACH MADE ELECTRODE GROUND ROD/GROUND FIELD/GROUND RING WITH AN INSTRUMENT SPECIFICALLY DESIGNED FOR TESTING GROUND FIELD SYSTEMS. IF GROUND RESISTANCE EXCEEDS 25 OHMS, CONTACT THE PROJECT ENGINEER FOR FURTHER DIRECTION. COPIES OF GROUND ROD TEST RESULTS SHALL BE FURNISHED TO THE RESIDENT ENGINEER/RESIDENT PROJECT REPRESENTATIVE.
- ALL PRODUCTS ASSOCIATED WITH THE GROUNDING SYSTEM SHALL BE UL-LISTED AND LABELED.
- ALL BOLTED OR MECHANICAL CONNECTIONS SHALL BE COATED WITH A CORROSION PREVENTATIVE COMPOUND BEFORE JOINING, SANCHEM INC. "NO-OX-ID "A-SPECIAL" COMPOUND, BURNDY PENETROX E, OR EQUAL.
- METALLIC SURFACES TO BE JOINED SHALL BE PREPARED BY THE REMOVAL OF ALL NON-CONDUCTIVE MATERIAL, PER 2011 NATIONAL ELECTRICAL CODE ARTICLE 250-12. ALL COPPER BUS BARS MUST BE CLEANED PRIOR TO MAKING CONNECTIONS TO REMOVE SURFACE OXIDATION.
- METALLIC RACEWAY FITTINGS SHALL BE MADE UP TIGHT TO PROVIDE A PERMANENT LOW IMPEDANCE PATH FOR ALL CIRCUITS. METAL CONDUIT TERMINATIONS IN ENCLOSURES SHALL BE BONDED TO THE ENCLOSURE WITH UL-LISTED FITTINGS SUITABLE FOR GROUNDING. PROVIDE GROUNDING BUSHINGS WITH BONDING JUMPERS FOR ALL METAL CONDUITS ENTERING SERVICE EQUIPMENT (METER BASE, CT CABINET, MAIN SERVICE BREAKER ENCLOSURE, ETC.). PROVIDE GROUNDING BUSHINGS WITH BONDING JUMPERS FOR ALL METAL CONDUITS ENTERING AN ENCLOSURE THROUGH CONCENTRIC OR ECCENTRIC KNOCKOUTS THAT ARE PUNCHED OR OTHERWISE FORMED SO AS TO IMPAIR THE ELECTRICAL CONNECTION TO GROUND. STANDARD LOCKNUTS OR BUSHINGS SHALL NOT BE THE SOLE MEANS FOR BONDING WHERE A CONDUIT ENTERS AN ENCLOSURE THROUGH A CONCENTRIC OR ECCENTRIC KNOCKOUT
- ALL CONNECTIONS, LOCATED ABOVE GRADE, BETWEEN THE DIFFERENT TYPES OF GROUNDING CONDUCTORS SHALL BE MADE USING UL-LISTED DOUBLE COMPRESSION CRIMP TYPE CONNECTORS OR UL-LISTED BOLTED GROUND CONNECTORS. FOR GROUND CONNECTIONS TO ENCLOSURES, CASES AND FRAMES OF ELECTRICAL EQUIPMENT NOT SUPPLIED WITH GROUND LUGS THE CONTRACTOR SHALL DRILL REQUIRED HOLES FOR MOUNTING A BOLTED GROUND CONNECTOR. ALL BOLTED GROUND CONNECTORS SHALL BE BURNDY, THOMAS AND BETTS, OR EQUAL. TIGHTEN CONNECTIONS TO COMPLY WITH TIGHTENING TORQUES IN UL STANDARD 486A TO ASSURE PERMANENT AND EFFECTIVE GROUNDING.
- ALL METAL EQUIPMENT ENCLOSURES, CONDUITS, CABINETS, BOXES, RECEPTACLES, MOTORS, ETC. SHALL BE BONDED TO THE RESPECTIVE GROUNDING SYSTEM.
- PROVIDE ALL BOXES FOR PROPOSED OUTLETS, SWITCHES, CIRCUIT BREAKERS, ETC. WITH GROUNDING SCREWS. PROVIDE ALL PANELBOARD, SWITCHGEAR, ETC., ENCLOSURES WITH GROUNDING BARS WITH INDIVIDUAL SCREWS, LUGS, CLAMPS, ETC., FOR EACH OF THE GROUNDING CONDUCTORS THAT ENTER THEIR RESPECTIVE ENCLOSURES.
- EACH NEW FEEDER CIRCUIT AND/OR BRANCH CIRCUIT SHALL INCLUDE AN EQUIPMENT GROUND WIRE. METAL RACEWAY OR CONDUIT SHALL NOT MEET THIS REQUIREMENT. THE EQUIPMENT GROUND WIRE FROM EQUIPMENT SHALL NOT BE SMALLER THAN ALLOWED BY 2011 NEC TABLE 250-122 "MINIMUM SIZE CONDUCTORS OR GROUNDING RACEWAY AND EQUIPMENT." WHEN CONDUCTORS ARE ADJUSTED IN SIZE TO COMPENSATE FOR VOLTAGE DROP, EQUIPMENT-GROUNDING CONDUCTORS SHALL BE ADJUSTED PROPORTIONATELY ACCORDING TO CIRCULAR MIL AREA. ALL EQUIPMENT GROUND WIRES SHALL BE COPPER, EITHER BARE OR INSULATED GREEN IN COLOR. WHERE THE EQUIPMENT GROUNDING CONDUCTORS ARE INSULATED, THEY SHALL BE IDENTIFIED BY THE COLOR GREEN, AND SHALL BE THE SAME INSULATION TYPE AS THE PHASE CONDUCTORS.

- ALL EXTERIOR METAL CONDUIT, WHERE NOT ELECTRICALLY CONTINUOUS BECAUSE OF MANHOLES, HANDHOLES, NON-METALLIC JUNCTION BOXES, ETC., SHALL BE BONDED TO ALL OTHER METAL CONDUIT IN THE RESPECTIVE DUCT RUN, AND AT EACH END, WITH A COPPER-BONDING JUMPER SIZED IN CONFORMANCE WITH 2011 NEC 250-102. WHERE METAL CONDUITS TERMINATE IN AN ENCLOSURE (SUCH AS A MOTOR CONTROL CENTER, SWITCHBOARD, ETC) WHERE THERE IS NOT ELECTRICAL CONTINUITY WITH THE CONDUIT AND THE RESPECTIVE ENCLOSURE, PROVIDE A BONDING JUMPER FROM THE RESPECTIVE ENCLOSURE GROUND BUS TO THE CONDUIT SIZED PER 2011 NEC 250-102.
- IT IS THE INTENT OF THIS SPECIFICATION THAT ALL MOTOR FRAMES, PUMP BASES ELECTRICAL EQUIPMENT ENCLOSURES, PANEL HOUSINGS, CONDUITS, BOXES, ETC. HAVE A CONTINUOUS COPPER WIRE GROUND CONNECTION AND SHALL BE POSITIVELY BONDED TO THE RESPECTIVE GROUNDING SYSTEM. CONDUIT CONNECTORS WILL NOT BE CONSIDERED AS ADEQUATE GROUNDING.
- PROVIDE A POSITIVE GROUND BOND FOR ALL OUTLET BOXES, ELECTRICAL EQUIPMENT ENCLOSURES, GROUNDING RECEPTACLES, TOGGLE SWITCHES, ETC. INSTALL A GROUNDING CONDUCTOR IN ALL WIRE AND CABLE RACEWAYS. GROUND CONDUCTOR TO HAVE 600-VOLT INSULATION AND BE IDENTIFIED BY A CONTINUOUS GREEN COLOR COATING. THEY SHALL BE USED SOLELY FOR GROUNDING PURPOSES AND BE ENTIRELY SEPARATE FROM WHITE GROUNDED NEUTRAL CONDUCTOR, EXCEPT AT SUPPLY SIDE OF SERVICE DISCONNECTING MEANS, WHERE GROUNDING AND NEUTRAL SYSTEMS ARE TO BE CONNECTED TO SERVICE GROUND.
- EACH AND ALL GROUNDED CASED AND METAL PARTS ASSOCIATED WITH ELECTRICAL EQUIPMENT SHALL BE TESTED FOR CONTINUITY OF CONNECTION WITH GROUND BUS SYSTEM BY CONTRACTOR IN PRESENCE OF OWNER'S REPRESENTATIVE.
- ALL CONNECTIONS BETWEEN THE DIFFERENT TYPES OF GROUNDING CONDUCTORS ABOVE GRADE SHALL BE MADE USING BOLTED GROUND CONNECTORS. GROUND LUGS SHALL BE PROVIDED IN ALL ENCLOSURES AND WIRING TERMINATION JUNCTION BOXES. EQUIPMENT GROUNDS AND GROUNDING CONDUCTOR SHALL BE CONNECTED TO THESE GROUND LUGS. FOR GROUND CONNECTIONS TO ENCLOSURES, CASES AND FRAMES OF ELECTRICAL EQUIPMENT NOT SUPPLIED WITH GROUND LUGS THE CONTRACTOR SHALL DRILL REQUIRED HOLES FOR MOUNTING A BOLTED GROUND CONNECTOR. ALL BOLTED GROUND CONNECTORS SHALL BE BURNDY, OR APPROVED EQUAL.
- BOND ALL NONCURRENT-CARRYING PARTS OF METAL EQUIPMENT TO GROUND SYSTEM.
- BUILDING STRUCTURAL STEEL SYSTEM SHALL BE BONDED TO ELECTRICAL GROUND SYSTEM.
- INSTALL GROUNDING ELECTRODE CONDUCTORS, LIGHTNING PROTECTION DOWN CONDUCTORS AND SEPARATE GROUND CONDUCTORS IN SCHEDULE 40 OR SCHEDULE 80 PVC CONDUIT OR EXPOSED WHERE ACCEPTABLE TO LOCAL CODES. WHERE GROUNDING ELECTRODE CONDUCTORS, LIGHTNING PROTECTION DOWN CONDUCTORS OR INDIVIDUAL GROUND CONDUCTORS ARE RUN IN PVC CONDUIT, DO NOT COMPLETELY ENCIRCLE CONDUIT WITH FERROUS AND/OR MAGNETIC MATERIALS. USE NON-METALLIC REINFORCED FIBERGLASS STRUT SUPPORT. WHERE METAL CONDUIT CLAMPS ARE INSTALLED, USE NYLON BOLTS, NUTS, WASHERS AND SPACERS TO INTERRUPT A COMPLETE METALLIC PATH FROM ENCIRCLING THE CONDUIT. THIS IS REQUIRED TO AVOID GIRDLING OF GROUND CONDUCTORS. GIRDLING OF A GROUND CONDUCTOR IS THE RESULT OF PLACING THE CONDUCTOR IN A RING OF MAGNETIC MATERIAL. THIS RING COULD BE A METALLIC CONDUIT, U-BOLT OR STRUT SUPPORT PIPE CLAMP, OR OTHER SUPPORT HARDWARE. THE RESULT OF GIRDLING GROUND CONDUCTORS SIGNIFICANTLY INCREASES THE INDUCTIVE IMPEDANCE OF THE GROUND CONDUCTOR. INDUCTIVE AND CAPACITIVE IMPEDANCE IS A TYPE OF RESISTANCE THAT OPPOSES THE FLOW OF ALTERNATING CURRENT. ANY INCREASE IN THE IMPEDANCE OF A GROUND CONDUCTOR REDUCES ITS ABILITY TO EFFECTIVELY MITIGATE RADIO FREQUENCY NOISE IN THE GROUND SYSTEM. THE CONDITION WHERE A GROUND CONDUCTOR IS GIRDLED DURING A LIGHTNING STRIKE RESULTS IN PHENOMENA KNOWN AS SURGE IMPEDANCE LOADING. SURGE IMPEDANCE LOADING IS A RESULT OF VOLTAGE AND CURRENT REACHING 500,000 VOLTS AND 10,000 AMPS FOR A SHORT DURATION. GIRDLING FURTHER INCREASES THE IMPEDANCE AT LIGHTNING FREQUENCIES OF 100 KILOHERTZ TO 100 MEGAHERTZ. AT THESE POWER AND FREQUENCY LEVELS ANY INCREASE IN THE IMPEDANCE OF THE GROUND CONDUCTOR MUST BE CONTROLLED. DURING LIGHTNING DISCHARGE CONDITIONS A LOW INDUCTIVE IMPEDANCE PATH IS MORE IMPORTANT THAN A LOW DC RESISTANCE PATH.
- IF LOCAL CODES DICTATE THAT INDIVIDUAL GROUNDING CONDUCTORS MUST BE RUN IN METAL CONDUIT OR RACEWAY, THEN THE CONDUIT OR RACEWAY MUST BE BONDED AT EACH END OF THE RUN WITH A BONDING JUMPER SIZED EQUAL TO THE INDIVIDUAL GROUNDING CONDUCTOR OR AS REQUIRED BY 2011 NEC 250-102. NOTE THIS DOES NOT APPLY TO AC EQUIPMENT GROUNDING CONDUCTORS RUN WITH AC CIRCUITS.
- WHERE A CONFLICT IS DETERMINED WITH RESPECT TO GROUNDING REQUIREMENTS PER MANUFACTURER INSTALLATION INSTRUCTIONS, NEC, AND/OR THE CONTRACT DOCUMENTS, CONTACT THE RESIDENT ENGINEER OR PROJECT ENGINEER FOR FURTHER DIRECTIONS.
- GROUND RODS SHALL BE MANUFACTURED IN THE UNITED STATES OF AMERICA TO COMPLY WITH THE AIRPORT IMPROVEMENT PROGRAM BUY AMERICAN REQUIREMENTS. STEEL USED TO MANUFACTURER GROUND RODS SHALL BE 100 PERCENT DOMESTIC STEEL.



10 FT. GROUND ROD

NOTES

- TYPE AND MINIMUM NUMBER OF GROUND RODS SHALL BE AS SPECIFIED ON THE PLAN.
- THE RESISTANCE TO GROUND OF THE GROUNDING SYSTEM SHALL NOT EXCEED 25 OHMS.
- COST OF GROUND RODS IS INCIDENTAL TO THE ASSOCIATED ITEMS REQUIRING GROUNDING UNLESS OTHERWISE SPECIFIED.
- GROUND RODS SHALL BE SPACED AS DETAILED ON THE PLANS AND SHALL NOT BE SPACED LESS THAN ONE ROD LENGTH APART.
- TOP OF GROUND RODS SHALL BE 12" MINIMUM BELOW GRADE UNLESS DETAILED OTHERWISE HEREIN.
- GROUND RODS FOR RUNWAY LIGHTING, TAXIWAY LIGHTING, AND TAXI GUIDANCE SIGNS SHALL BE A MINIMUM 3/4-INCH DIAMETER BY 10-FT LONG UL LISTED COPPER CLAD.

GROUND RODS

(NOT TO SCALE)

MAR 25, 2014 1:50 PM H:\GLO00382 pwr\spi-svr306\hanson.dom\hanson Projects\Documents\13\jobs\13A0058\13A0058D\CAD\Wiporth\Sheet\E-004-NOTES

REVISION		CRAWFORD COUNTY AIRPORT ROBINSON CRAWFORD COUNTY, ILLINOIS	IL. PROJ.: RSY-4334 S.B.C. PROJ.: 3-17-SBGP-XX
DATE			
Hanson Proj. No. 13A0058	Filename: E-004-NOTES.dwg		
Scale	NOT TO SCALE	Date	03/07/14
LAYOUT	KNL	DRAWN	08/19/13
REVIEWED	CAH/KNL	BAK	08/19/13
© Copyright Hanson Professional Services Inc. 2014 Hanson Professional Services Inc. 1525 South Sixth Street Springfield, Illinois 62703-2986 Ph: (217) 788-2450 Fax: (217) 788-2903 www.hanson-inc.com Offices Nationwide			
REPLACE MRL AND MITL SYSTEMS		GROUNDING NOTES	
48			
48 of 48 sheets			